

DAY, SON & HEWITT'S

Veterinary Practice at Home

Giving the
Cause, Symptoms
and Treatment
of everyday

ANIMAL DISORDERS

21st
Edition



Fully
Illustrated

ROYAL ANIMAL MEDICINE MANUFACTORY
LONDON



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Veterinary Practice at Home.

21ST EDITION.

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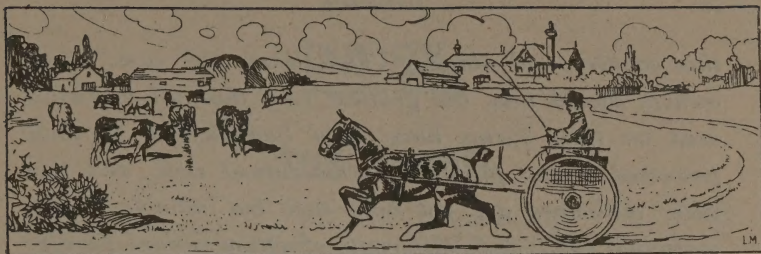
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PREFACE.

In compiling the 21st Edition of this work, we would repeat that our object has been to provide the stock-breeding community with a plain and simple exposition of the causes, symptoms, and treatment of the everyday disorders of animals. In order to help our readers to diagnose the various diseases, we have again increased the number of illustrations.

Stockowners in the present day have neither the time nor the inclination to study long and elaborate works on Veterinary subjects, so it is hoped that this simply worded treatise may be appreciated.

The ridiculous idea that any sort of treatment or medicine is good enough for animals is luckily dying out, and well it might, seeing that Pedigree-stock of all descriptions demands larger prices than ever, both in

this country and abroad. This being the case, stock-owners should take the greatest care that all medicines used on their farms have been compounded by those possessed of the proper Pharmaceutical skill, and that such medicines are not only safe but reliable. Full medicinal value and uniformity of action cannot possibly be expected of cheap and inferior preparations. It is always important to remember that if disease be attacked in its early stages it can more easily be grappled with, whereas if it be neglected the delay will almost certainly lead to further expense and trouble, and in many instances to loss of life.

We again tender our best thanks to our patrons for their continued support, also for so kindly bringing our specialities before the notice of their friends.

DAY, SON & HEWITT.

January, 1916.

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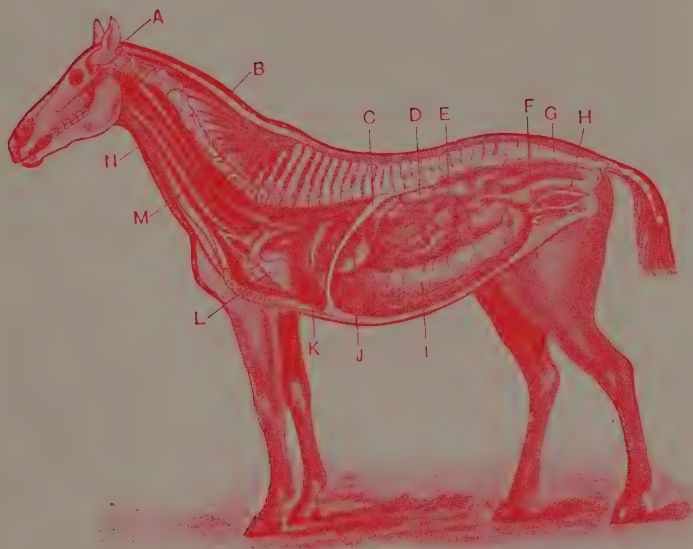
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HORSE.—The Internal Organs.



- A. Poll or Crest of Skull.
- B. Suspensory ligament of Neck.
- C. Diaphragm or midriff.
- D. Kidney.
- E. Small Intestines.
- F. Uterus or Womb.
- G. Rectum or termination of Large Gut.
- H. Bladder.

- I. Large Intestines.
- J. Part of Liver, showing on left side.
- K. Lung, cut to show the form of diaphragm.
- L. Heart.
- M. Trachea or Windpipe.
- N. Gullet, leading to Stomach.

THE HORSE.

BARRENNESS OR STERILITY IN MARES AND STALLIONS.

Successful fecundation is generally looked upon as a sure result of sending the mare to the horse at a certain period, but experienced breeders know that there are a great many failures, and these failures have been put by various authorities at from 30 to 40 per cent.

Causes.—Sterility, barrenness, or infecundity depend on numerous causes, organic and physical, and it may be temporary and removable, or permanent and incurable.

Dr. Fleming ("Veterinary Obstetrics") says: "Prolonged continence and old age are not infrequent causes of infecundity, as is witnessed in old mares which have worked for many years in towns, and have been transferred to the country for breeding purposes."

It may likewise be due, though temporarily, to premature or tardy coition, when the generative organs are not in a physiological condition for conception, or when they are in an irritable or abnormal state. Underfed or overfed animals do not breed so readily as those which are in a moderate condition—fat animals are especially unfruitful; excitable or vicious mares are less likely to breed than those of an equable and gentle disposition. Active exercise just before the animal is fed is conducive to proper fertilization.

Various diseased conditions of the generative organs of the mare, such as alterations in the ovaries, uterus, or vagina, may hinder conception, and in any case where there has been repeated failure and the animal is in fair condition, not old or worn out, and properly fed and managed, a careful examination should be made of the generative apparatus, as removal of the obstacle to generation may be quite within the scope of surgical or medical measures. Sterility in mares generally arises from one of the four following causes, viz.:

Contracted or malformed os, a non-retaining vagina, or from an acid secretion of the vaginal mucous membranes which destroys the spermatozoa before they have time to gravitate into the uterus.

The fault may rest with the stallion and be the result of overfeeding and lack of exercise in getting the animal up into show condition, or to having been called upon to serve too many mares during a season. Stallions should not be used for breeding purposes until three years old, and should never be allowed to serve more than twenty mares during the first season.

Treatment.—In those cases due to too high condition or to excessive use of the sexual organs, the obvious remedy is a lowering of the diet, exercise, or rest, as the case may be. Feed on a light, yet nutritious diet, and sprinkle all food with the “Kossolian Blood Salt” a week or ten days before service and for a few days afterwards. When sterility is considered to be due to debility, rest and the most nourishing food, given little and often, is called for. If in addition to this the “Kossolian Blood Salt” is sprinkled on the food for about a month before service, conception is practically assured, for nothing stimulates the generative organs more than pure blood. A good supply of blood either to the ovaries of the mare or testicles of the horse cannot be expected if they have become debilitated by the presence of worms, especially the minute Red Worms (Strongyles). When this occurs carry out the treatment as on page 93. Sometimes sterility is due to an acid condition of the mucus in the canals of both male and female; in such instances give an ounce or two of bicarbonate of soda in the drinking water for a week before service.

Mares that do not yield to the aforesaid treatment should be submitted to manual exploration by an experienced Veterinary Surgeon, with a view of ascertaining the existence or otherwise of special causes of sterility in the shape of obstructions to conception. Resort to artificial insemination may be necessary, for where nature fails it is sometimes necessary for art to step in.

Mr. J. Phillips, Rhondda Valley, writes:—“The increase in my orders lately will show how I appreciate your ‘Kossolian Blood Salt.’ I can recommend it to all Horsekeepers as one of the best articles ever produced for Sterility.”

BLISTERING A HORSE.

In order to raise a good "Blister," first of all clip the hair from the affected part and rub in the quantity of "Blister Ointment" determined on, for ten or fifteen minutes. When the legs require to be blistered, the preparation can be made still more energetic by first placing them in a bucket of warm water for a short time. It is always advisable to remove the bedding and to scatter plenty of short litter or sawdust on the floor of the stable so as to prevent the animal slipping. The horse's head should be tied up to the manger from twelve to twenty-four hours to prevent him biting the blistered part, or a "Cradle" will answer even better. In about six or eight hours after the application of the "blister," vesication should have taken place, and on the following day apply a little of the "White Chemical Extract" by means of a soft brush or feather. Certain skins are coarser than others, and when they fail to "rise" after blistering, repeat the application. Always rub in the blister the *wrong* way of the hair, and on no account remove the scab that forms until it peels off naturally, otherwise a blemish will result. When there is danger of the "Blister Ointment"* running or acting upon places that are not intended, smear over the parts with a little hog's lard, or keep wet with water. This is of importance when blistering the fetlocks, pasterns and heels, which are very sensitive. The same remarks apply with equal force to the "bends" and flexures of the knees and hock joints.

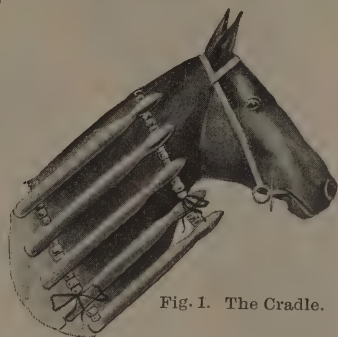


Fig. 1. The Cradle.

Note.—Mares in season, horses inclined to dropsy, and those that are in a poor or debilitated condition or shedding their coats, should not be blistered; for in these cases the

*The "Red Blister Ointment" is better adapted for absorbing bony enlargements such as Splints, Spavins, Side-bones, &c., than the "Brown Blister Ointment," the latter being more suitable for swollen tendons, sore throats, and rubbing on the chest for respiratory troubles, &c.

part is apt to swell enormously, and the skin to slough. Avoid blistering during severe or cold weather, and never do so in any case *until all the heat and tenderness have departed* from the part to be acted on. The blister should be half strength for strained tendons or for young animals with thin skins.

BOG OR BLOOD SPAVIN.

Symptoms.—This is an over-distension of the capsular ligament of the hock joint, due to excess of joint oil at the part where it is least supported by ligaments. It is similar to Windgalls and is situated on the inside of the hock, under the big vein which runs up the inside of the leg. It is an unsoundness, and sometimes causes acute lameness. Bog Spavin is frequently associated with Thorough-Pin and is very common in heavy draught horses.

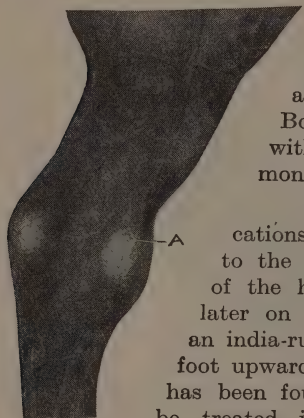


Fig. 2.
A. Seat of Bog Spavin.

Treatment.—Apply three applications of the “Red Blister Ointment” to the swelling (avoiding the cap or point of the hock) at intervals of six weeks, and later on exert upward pressure by means of an india-rubber bandage, commencing from the foot upwards. The “Brown Chemical Extract” has been found most useful, if the Bog Spavin be treated in the early stage, in conjunction with frequent cold-water bandaging. Moderate exercise will do no harm, but it is important to give an occasional “Diuretic Ball,” and very little corn.

BOTS.

Symptoms.—Debility, indigestion, and the animal eats ravenously without putting on flesh.

Cause.—The Bot fly, or *Æstrus Equi*, deposits her eggs on the long hairs at back of knees, breast, and sides of the horse about July or August, when he is working in the fields. The horse, in licking himself, takes up the eggs,

which are passed with the food into the stomach, where they hatch out in about three weeks and there attach themselves by means of a pair of hooks, remaining during the winter until the following May or June. In doing this they injure and weaken the stomach, and cause a lot of internal irritation, loss of flesh, etc. These Bots, reddish in colour and about seven-eighths of an inch long, are found in clusters of eight or ten; but as many as 200 have been seen in the stomach.

Treatment.—This is best accomplished from about April to June, as at this time the parasites loosen their hold. The animal should be fasted for about twelve hours, and

a warm bran mash given the last thing at night. The following morning give a "Black Physic Ball"—during which time feed on a light and laxative diet, consisting of mashes, gruel, and fresh brewer's grains. After the "Ball" has properly acted, give a dose of the "Red Worm Mixture," and repeat, as directed. See that all food is of the best quality, and feed little and often. At this stage follow on with a course of "Kossolian Blood Salt," in order to impart tone to the stomach and intestines. Allow rock salt in the manger, and give regular but gentle exercise during treatment.

Prevention.—Either singe or clip off the long hairs from the forelegs during the summer months, and then paint these parts, as well as the breast, with the "Anti-Fly Dressing," which will prevent the flies depositing their eggs. This is especially important if the horses are working in the fields

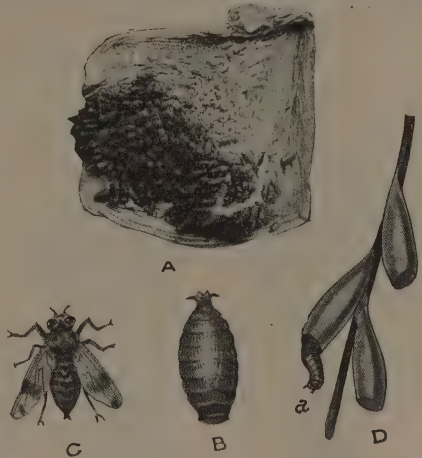


Fig. 3.

- A. Portion of Horse's Stomach, showing "Bots" attached.
- B. "Bot" Maggot, showing Hooks.
- C. Adult "Bot" Fly (*Gastrophilus Equi*).
- D. Eggs attached to a hair. Larvæ coming out a.

or are turned out to grass. Burn all the little yellow spots or eggs seen on the hairs; also any Bots that are expelled. Some authorities are in favour of either scraping off, or removing the eggs with soap and water.

BROKEN KNEES AND OPEN JOINTS.

Treatment.—The first thing to be done is to remove all dirt and grit by sponging the part with warm water. The edges of the wound should be carefully brought together

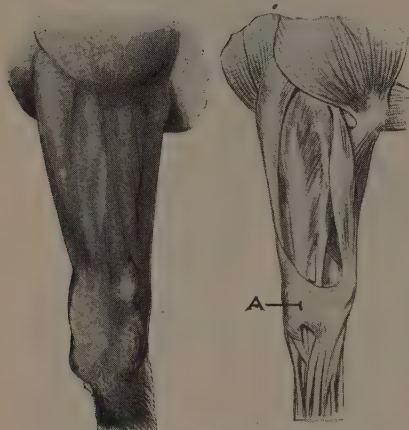


Fig. 4. Swollen Knee.
(Seat of injury A. (Capsular ligament).)

and secured by plasters, placing over the wound a piece of cotton wool or lint saturated in the "Antiseptic Dressing." This pad may be secured by a *loose** woollen bandage, kept constantly wet for three or four days, or until most of the tenderness has departed, after which a little ordinary flour may be dusted over occasionally, so as to help form a scab. If there be a flow of synovia or joint oil, it is better to let this remain undisturbed; but great advantage can be

obtained by allowing cold water to run over the part two or three times daily. This soon stops the flow of synovia and also heals the injury, especially if the "Brown Blister Ointment" be applied afterwards, and the patient turned out to grass. The blister causes the wound to close, thus preventing the admission of air—a very important point. On no account cut away any ragged skin, for there will be none too much when the swelling has departed. New skin is never produced, so every particle must be saved.

Prevent the patient injuring the bad knee by either tying him up short, or by the employment of a cradle. At this stage it is a good plan to carefully rub off the scabs every

* Never apply too much pressure or an enlargement will follow.

two or three days, and to touch the raw surfaces or granulations which may appear in eight or ten days with a caustic stick. Every time this is done the new scab gets smaller and there is not so great a chance of it breaking by movement of the limbs; but when this is done it is sometimes advisable to remove the cloths and leave the wounds bare for a few days. The diet must be light and nutritious, giving a "Black Physic Ball" occasionally. To prevent swelling of the legs, bandages should be applied from the foot upwards, and a "Diuretic Ball" given every fourth day. Fractured knee bones usually end in "stiff-knee," rendering the horse useless, unless it be for slow work.

The after-treatment consists in allowing a little quiet led exercise twice daily, and repeated light applications of the "Blister Ointment" so as to stimulate the absorbents of the skin in the removal of any thickening of the injured structures. It often happens that even when mild blisters are put on a broken knee that the hair grows the wrong way afterwards, leaving a little roughness. In such cases shaving or clipping both knees often prevents detection of the injury.

In slight injuries, dressing the parts with the "Brown Chemical Extract" twice daily and applying cold water bandages is all that is required.

BROKEN WIND, WHISTLING AND ASTHMA.

Cause.—The above diseases are usually constitutional, arising from no direct cause; but are said by some authors, however, to be due to giving musty hay and corn, or too violent exercise, after a heavy meal.

Symptoms.—The patient shows difficulty in breathing, and distress on the slightest exertion, there being two efforts in expiration and only one with inspiration. Associated with

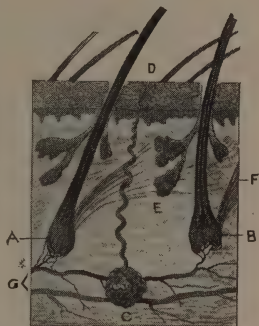


Fig. 5. Section through the Skin of a horse's knee.

- A. A Hair, external view showing root with blood supply.
- B. Hair in section.
- C. A Sweat Gland with coiled tube to surface of Skin D.
- E. Muscle fibres which move the hairs.
- G. Blood-vessels.

Broken Wind there is a peculiar cough, due to rupture of the air-cells of the lungs, that is absolutely diagnostic. Asthma is very closely allied to Broken Wind, its most distinctive features being its spasmodic character and uncertainty of occurrence.

Treatment.—Although in well-marked cases a permanent cure cannot be expected, still even some of the worst cases of Broken Wind and Asthma are frequently benefited by judicious treatment. The strictest attention must be given to proper dieting and watering, and only light work allowed. Let all food be of the best quality, and given little and often; also see that it is always *damped*. Bruise the corn and mix with it about a pound of boiled linseed or a little linseed oil. Soaked beans are better than bean meal, as they are more likely to be masticated. Never exercise on a full stomach, and give a little hay and no straw; and as to water, give this in small quantities, before feeding, and with the chill off. Carrots, if procurable, are very useful for this complaint. A “Black Physic Ball” occasionally, and the administration of the “Easakof” or a “Cough Powder” mixed with the food as directed, will quickly relieve the coughing and breathing. We advise pine-shavings for litter.

BRONCHITIS, PNEUMONIA, PLEURISY, Etc.

“Bronchitis” is a term given to an inflammatory condition of the small air passages in the lungs or bronchial tubes; “Pneumonia” being applied to a similar affection of the lung substance. “Pleurisy” is a disease affecting the membrane covering the lungs or lining of the chest.

Symptoms.—Shivering fits, coughing, wheezing, and difficult breathing. Fever is invariably present and debility is well marked. As a rule, with chest affections, a patient avoids lying down.

Treatment.—Place the animal in a comfortable loose box, with abundance of fresh air, and clothe heavily, and, seeing that all chest affections are generally ushered in by shivering fits, give one or even a double dose of the “Gaseous Fluid” in a pint and a half of gruel mixed with treacle. This may ward off more serious consequences. The legs should

be hand-rubbed with the "White Chemical Extract," and afterwards bandaged with flannel. As to the diet, let it be light and laxative to commence with, such as green-meat, carrots, boiled barley, linseed jelly, potatoes, etc. Feed from the floor so as to facilitate discharge from the nostrils, if there be any present.

Avoid bleeding, as it leaves the system greatly weakened. Let the sides of the chest (just behind the shoulder) be well fomented with cloths, wrung out of hot water, and sprinkled with the "Chemical Extract," or, if preferred, this may be rubbed in. Renew this treatment three or even four times daily, and guard against the animal taking a chill afterwards.

During the active stage of the disorder give a dose of the "Alcoholic Ether" last thing at night, and during the day the "Gaseodyne" in plenty of warm oatmeal gruel. Inhalation of steam affords great relief, and for this purpose put a dessert-spoonful of the "Globe" Disinfectant on a little hay, in the bottom of a pail, and then pour boiling water over it. The animal's head should be held over this for fifteen minutes, three or four times daily. See that the nostrils are kept clean by sponging with warm water frequently. The "Cough Drink" which is mixed all ready for use, or the "Easakof," should be given whenever the cough is troublesome. Many of our customers speak in the highest terms of "Kossolian" given in boiled linseed, as it is most soothing and strengthening in bad cases.

For drinking water, give weak infusions of linseed or tepid water; and with convalescence better food may be given, adding a few half-bottle doses of the "Gaseous Fluid," in a pint of warm ale, or stout. Allow at this stage gentle exercise, or, better still, a couple of months' run at grass, if the weather permit.

BURNS AND SCALDS.

These may be very slight or very severe, but if the latter, the animal soon dies from shock and exhaustion.

Treatment.—First of all carefully clean the surface of the wound by fomenting with lukewarm water, and then gently smear on a little of the "White Chemical Extract." Over this place a layer of Medicated Cotton Wool, which can

be kept in place by a light bandage. Sometimes, by way of a change, dust over the wound a little ordinary flour, the great object being to exclude the air. Later on if the wound seems to require something stronger than the above, so as to stimulate and heal the part quicker, the "Special Antiseptic Dressing" can be used. Give an occasional mild "Black Physic Ball" and a limited amount of corn, and, should fever be present, a dose of the "Alcoholic Ether" last thing at night. If the patient appears to be in pain a few doses of the "Gaseodyne" may be given in gruel or milk.

CALCULI OR STONES.

Causes.—These generally arise from eating irritating or indigestible substances, which form the nuclei of these stones or Calculi. Bran and maize are both rich in phosphates, and are liable to be the predisposing cause of the above.

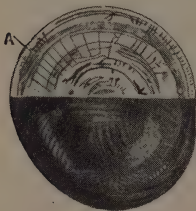


Fig. 6. Calculus.
A. Showing Cut Section.

Symptoms.—Colicky pains arising from no apparent cause, constipation, restlessness; distension of the belly, etc.

Treatment.—If these are suspected in the bowels, a qualified "Vet" should be called in; for he may be able to remove them. We have known of good results following a full-strength "Black Physic Ball," rubbed down in a pint of linseed oil, given as a drench. Enemas of warm soap and water are also useful.

CANKER OF THE FOOT.

Cause.—Heredity; but is often due to want of cleanliness, and sometimes results from a neglected Thrush.

Symptoms.—The frog is noticed to be soft and fungus-like, and is very liable to "bleed" on pressure. As a rule a very foetid and offensive smell is emitted, and if the case be neglected the disease spreads to the entire sole.

Treatment.—In bad cases, in which the fungus still continues to grow and there is a lot of decayed horn, the most economical plan is to call in a qualified "Vet," as

stripping of the whole sole is invariably called for. This is, however, a very painful operation. The following treatment has met with great success in mild cases. Cut away all the decayed or fungus portion and dress the horn secreting surface with the "Special Canker Ointment" as directed. Apply pressure by pads of tow and wedges under the sole. Keep the strength of the patient up by good food, given little and often, and a course of the "Kossolian Blood Salt" will greatly benefit the patient.

CAPPED ELBOW.

Cause.—This is caused by the constant bruising of the soft tissues of the elbow by resting it on the heels of the shoe, or on the ground, in narrow, insufficiently bedded stalls.

Symptoms.—A hard or soft swelling at the elbow, about the size of a hen's egg, which, although it may not cause lameness, is very unsightly

Treatment.—Apply hot water fomentations for a few days until all heat and tenderness have departed, and give either a "Diuretic Ball" or "Black Physic Ball." Following this, rub in once or twice daily a little of the "Chemical Extract." It is sometimes advisable to lance the swelling if matter has formed, by means of a sharp, clean pen-knife, and then apply the "Chemical Extract" as for an ordinary wound. By way of prevention, allow plenty of soft bedding and use a three-quarter shoe; the "Offord Pad" is also useful. As in the case of Capped Hock, the prevention of further injury is essential to successful treatment.

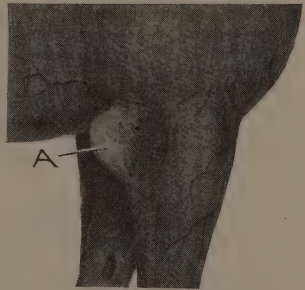


Fig. 7. Capped Elbow.
A. Showing Swelling.

CAPPED HOCK.

Cause.—This usually occurs from self-inflicted blows, such as striking a closing door or gate.

Symptoms.—A round swelling in the point of the hock, due to watery effusion under the skin in this situation. Capped Hock certainly detracts from the commercial value of the animal, but it rarely affects his usefulness and is not an unsoundness.

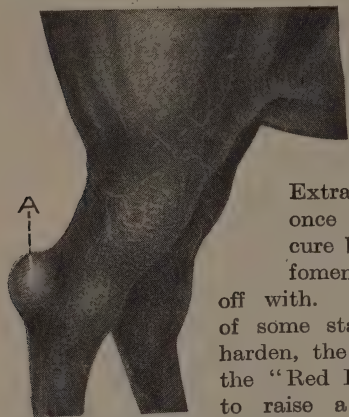


Fig. 8. Capped Hock.
A. Seat of Disease.

Treatment.—If the injury is recent, warm fomentations and the rubbing in gently of the “Chemical

Extract” by a circular movement, once daily, will soon bring about a cure by absorption of the fluid. Cold fomentations are also useful to finish

off with. In cases where the swelling is of some standing and has a tendency to harden, the best plan is to apply a *little* of the “Red Blister Ointment,” just sufficient to raise a slight scurf or soreness, the treatment to be resumed again and again; but not before each successive soreness has

disappeared. Give a light diet and an occasional “Diuretic Ball.” Provide plenty of good bedding, and in the case of kickers, pad the stall boards and post. Hand-massage is most beneficial.

CARE OF THE FEET.

Keep the cleft and soles clean and well picked out every time the horse is groomed, for if this is not done it may lead to “Thrush.” It is advisable to instruct the shoeing smith not to rasp the outside covering of the hoofs, for if this is done it tends to make them brittle. Some hoofs are constitutionally weak and brittle, and when this is the case the “Hornicura” should be applied to the entire foot.

CASTRATION.

The spring or autumn is the best time to perform this operation for we then avoid the cold and damp weather, and the troublesome flies.

The colt is usually castrated by the Veterinary Surgeon, but in the case of colonials and others remote from such assistance, the owner has to depend upon his own skill. The operation should never be attempted unless the animal is in perfect health. If at grass, shut the animal up early overnight, and feed sparingly for a few days before operating.

Should the animal have only one testicle down (called a Rig) let it be operated on, for all the growth will then go into the other one, and it will in all probability come within reach in about six months, or by the following spring.

The following are the usual methods of castrating:

1. By the hot iron (actual cautery).
2. By twisting (torsion).
3. By the covered operation (this is the only one applicable when hernia is present).
4. Ecraseur.

What is called the "standing operation" is rapidly becoming a favourite method with the younger school of Veterinarians, and many owners prefer it, since it does away with the necessity for casting, with its attendant trouble and risk.

After the operation the scrotum should be bathed, and the wound opened up once or twice with the fingers to prevent premature or false healing, and to permit of the free drainage of pus. In addition to this, apply a little of the "Antiseptic Dressing," as directed.

COLD OR SIMPLE CATARRH.

Causes.—This is an inflammatory condition of the lining membrane of the nose and air passages of the head, and is usually produced by exposure or the inhalation of impure air in close, badly ventilated stables. Horses are especially liable to colds in early spring, and at periods when the coat changes. Neglected cases often develop into nasal gleet.

Symptoms.—The animals appear dull, with a running discharge from the eyes and from one or both nostrils, which is at first thin and watery, soon becoming white in colour and thicker in consistence. The throat may be sore, producing a soft blowing cough, with loss of appetite, and staring coat.

Treatment.—Immediately these symptoms are observed, and the horse is noticed to go off his food, work should be promptly suspended. It is false economy to persist in working a horse with a cold, as apart from the risk of extension of inflammation to the lower air passages, recovery is delayed. A cold that with rest and proper treatment might have been cured in a few days, hangs about the animal for weeks or months. Keep the animal in a nice dry, airy loose-box; clothe well, and have the legs bandaged; also give a "Black Physic Ball," and feed on a soft and laxative diet, such as bran mash, to which add a small quantity of linseed meal, a few scalded oats and some sliced carrots. Boiled barley with a little treacle and bran are useful, and hay tea should be given to drink. If the discharge from the nostrils is considerable, steam the head frequently with a nosebag containing bran or hayseeds, over which pour boiling water and a little vinegar. In order to keep the water warm for a long time, place in it a brick that has been made red-hot in the fire. Feeding from the ground and anointing the nostril with vaseline, greatly facilitates the discharge. This done, last thing at night and first thing in the morning give one quart of gruel sweetened with treacle, into which put one wineglassful of "Alcoholic Ether," so as to gently excite perspiration and reduce whatever fever is present. This dose may be repeated as often as necessary. On recovery keep the animal's strength up by better food and give occasional doses of the "Gaseous Fluid" in either old ale or gruel. Should the throat be sore or tender apply the "Chemical Extract" to it daily. As a cough is generally associated with a cold, this can be relieved by the "Easakof," merely spreading a little of it over the teeth or tongue.

COLIC, GRIPES, OR SPASMS.

Causes.—For the most part these are of a distinctly preventable character, being chiefly due to errors in dieting, bad food, long fasts and hurried feeding, drinking large quantities of cold water when overheated, and sudden changes of diet. Cutting chaff into very short lengths is a fruitful cause of Colic; for this prevents proper mastication. Dung balls or worms are often unsuspected causes of Colic.

Symptoms.—The animal shows signs of restlessness—stamps his feet, strikes his belly with his hind feet, looks round anxiously at his sides, and rejects food. He gets up and lies down rapidly, and frequently throws himself about, and seems relieved by either pressure or friction over the belly. The pain comes on at intervals, and the dung is usually hard. These are the symptoms of *Ordinary Colic*; but the reader should also become familiar with the symptoms attending *Inflammation of the Bowels* (see page 43).



Fig. 9. Horse with Colic.

Usual Symptoms of Ordinary Colic.

Sudden in its attack.

Pulse rarely much quickened in the early period, and during the intervals of ease.

Legs and ears of the natural temperature.

Relief obtained from rubbing the belly.

Intervals of ease.

Strength scarcely affected.

Usual Symptoms of Inflammation of the Bowels.

Less sudden in its approach, with previous indications of fever.

Pulse very much quickened, but small, and often scarcely to be felt.

Legs and ears cold.

Belly exceedingly tender and painful to the touch.

Constant pain.

Rapid and great weakness.

Treatment.—Remove the animal into a roomy loose box, having plenty of clean bedding, and if the weather is cold he should be well rugged up and the legs bandaged. Take away all food, for if given it only means adding fuel to the fire. If the patient is suffering from what is termed Cramp Colic, give immediately a full dose of the "Gaseous Fluid" in a pint of linseed oil, for this treatment not only quickly relieves the pain, but carries off any irritant that may have contributed to it. If the animal be not relieved in fifteen minutes repeat the "Gaseous Fluid" in some warm water, ale or gruel, to which a full dose of the "Gaseodyne" may be added, especially if the spasms are severe. In addition to this, apply hot water blankets to the belly or well rub it with a stimulating liniment, such as the "Chemical Extract." Keep the patient from rolling about. Every case, however, should be treated on its merits, but with town horses that are heavily corn fed, and kept generally on dry food, it is useful to give a "Black Physic Ball"* at the outset of the attack, as this gives a good start if the colic is due to accumulated fæces. Give enemas of warm soapy water (about a couple of quarts), to which add two ounces of either glycerine or linseed oil, and repeat, if necessary, every half hour.

CONDITIONING.

When horsemen speak of condition they do not always mean the same thing; for there are two kinds of condition, the one, habit of body, being not only entirely different from the other, but positively inimical. For instance, the owner of the racehorse, the hunter, and the general-utility animal requires "hard" or working condition, in which all superfluous fat is "trained" off, and the muscle fibres, heart and lung power are developed to their greatest degree of strength for exertion and endurance. The dealer and exhibitor, on the other hand, require "show" or "sale" condition, which consists of roundness of body, a large amount of fat, a sleekness of coat, and suppleness of skin. This may be effected by those agents that assist the digestive process, thereby enabling

* In certain cases it is of the utmost importance to get the bowels to act as quickly as possible, and the following plan will prove useful. Get a quarter of a pint of boiling water and into this put a "Black Physic Ball," cutting it up into five or six slices. This will soon dissolve, and to the solution so obtained add some Linseed Oil.

the skin and kidneys to get rid of superfluous and effete material, which would otherwise cause eruptions or blotches and spoil the sleek coat just as the show day approaches.

Working condition is, then, the most important and the most useful; but how is it to be attained? By keeping the blood pure, by judicious feeding, good grooming, regular exercise, and assiduous attention to the general health. A great deal of the strains and sprains, colic or gripes, fever in the feet, and the acute respiratory troubles (that end in the wind becoming permanently affected) are due to working horses that are out of condition, such as when they are taken up from grass.

There are many horses that eat enormously and yet never get into proper show condition, this being due to their bodies being so loaded with effete material that the blood gets clogged, and as a result a swollen leg or some sort of skin trouble appears, which precludes any possibility of the animal becoming a Prize Winner. The horse intended for show should, of course, have no internal parasites to maintain, nor external ones to worry him, and should have a healthy and active liver.

To avoid these evils a proper course of gradual preparation should be pursued; but it may be objected there is not time to gradually train a grass-fed animal to eat and digest a lot of hard corn. Just so, and this induced us years ago to enter upon an exhaustive course of experiments, in order to test the value of various foods and drugs in combination, with the result that a perfect "conditioner" has been found in what we term "Kossolian Blood Salt."

This preparation rapidly purifies the blood, and has the effect of doubling the digestive power, while eliminating all the waste products by the natural emunctories, such as the kidneys, skin, bowels, and glandular structures of the body.

CONSTIPATION, COSTIVENESS, OR STOPPAGE.

Causes.—Horses are liable to the above from eating new grass or clover, Indian corn, pea straw, etc., with which the digestive organs cannot properly deal, causing large masses to accumulate in the lower bowels; but it may arise from

torpidity of the liver, a too astringent diet such as maize, etc., or from withholding a proper supply of drinking water. Horses with defective teeth (especially the molars) are frequent sufferers.

Symptoms.—A hard condition of the fæces, which are passed by an abnormal effort, colicky pains, restlessness, etc.

Treatment.—Give a full-strength "Black Physic Ball" and in a few hours afterwards give a large sloppy bran mash, which may be repeated every five or six hours if necessary. Do not allow hay, or any other dry food, until the next morning. Give plenty of lukewarm water and allow a little gentle exercise. Relieve pain by repeated doses of the "Gaseodyne." Injections of soap and warm water by means of the "Simplex" Enema Syringe, every four hours, are most useful. It may sometimes happen that the impacted masses require the introduction of the hand (Back Raking) for their removal, but this will rarely occur if the injection be used, as it gradually softens the fæces.

Prevention.—It is a good practice to give every spring and autumn, an occasional mild "Black Physic Ball," since experience tells us that fewer cases of impaction and other bowel troubles occur when this is done, and appropriate food is given. These balls will be found certain in their action, they do not nauseate nor gripe, neither do they leave a horse debilitated or off appetite. Give "Kossolian" twice a week.

N.B.—Never give habitual doses of linseed oil, for this leads to weakness of the bowels.

CORNS.

Causes and Symptoms.—A corn in the foot of the horse is due to a bruise or injury of the sensitive foot structures, generally at the inner corner of the heel of the fore foot, causing the horn to become reddish, soft, and tender. It is caused by the heel of a badly fitted shoe or one that has been permitted to remain on too long without removal. Flat and weak-heeled hunters are more susceptible than others. The usual symptoms of foot lameness are present.

Treatment.—Commence by giving a “Black Physic Ball”; also put the animal on a light diet. Remove the shoe, and if there be reason to suppose that matter has formed, have the part carefully pared out (even if a few drops of blood be spilt) until exit is given to the pus, or this will burrow upwards and make its exit at the top of the hoof, terminating in “Quittor.” After this apply a poultice made of equal parts of linseed meal and bran for two or three days, and apply the “Azodyne” once or twice daily. Renew this treatment until relief is obtained, and then apply the “Hornicura” to the entire hoof. When the animal is considered well enough, have a three-quarter or bar shoe tacked on with a leather sole. An india-rubber bar pad is often most useful.



Fig. 10.
The ground or plantar surface of
Hoof showing location of
Corns—A A.

COUGH.

A cough is merely the symptom of a disease, such as pneumonia, bronchitis, sore throat, etc., and may be described as a forcible expulsion of air from the lungs, with a closure of the glottis. It generally indicates an endeavour to remove some irritating substance from either the lungs or throat. The “moist” cough, in which mucus is expelled, accompanies an excessive collection of fluid in the air passages; the “dry” cough on the other hand is generally of a hacking nature, indicating irritation of the throat or lungs.

Symptoms.—Cold ears and extremities. If a horse coughs after drinking, this indicates trouble in the windpipe, but a cough accompanied by a staring coat generally means worms, which should be treated at once, as on page 89. All these various causes produce distinct and peculiar sounds, and it is of the utmost importance to find out the cause if successful treatment is expected.

Treatment.—Place in a cool, well-ventilated stall, free from all draught, and let the diet consist of boiled linseed with the food, plenty of carrots in winter or green-meat in summer, and scalded oats. It is always dangerous to work horses that have colds or coughs; they must be kept in and treated at once. Give all food in small quantities at a time, but of the best quality. In bad cases it is better to damp all food with either salt and water or linseed mucilage, and in giving hay, let it be long, and not chopped. Always water before feeding, or preferably keep water—which should be clean and frequently changed—always in front of the animal, so that it can drink at will. By way of medicine give half a packet of the “Red Drench” in some sweetened gruel, morning and evening, for a few days. The cough



Fig. 11. How to give the “Easakof.”

may be treated either with the “Cough Drink” or “Easakof,” as directed, for both are equally efficacious; but if it arise from a neglected cold or inflamed throat, it is advisable to rub in the “Chemical Extract,” round the throat from ear to ear. Water in which a

little linseed or treacle has been added, is far preferable to ordinary drinking water.

With convalescence, build up the horse's strength by giving gruel, to which add milk and eggs; also give a few doses of the “Gaseous Fluid,” in a pint of old ale or stout.

CRACKED HEELS.

Causes.—This affection is usually produced by irritation, due to washing the animal's feet in warm water and omitting to thoroughly dry them afterwards; also from clipping the hair off the back part of the fetlocks, especially on draught horses. White heels appear to be more liable to crack than dark ones. It is a form of Eczema, in which the skin and sebaceous or oil glands in the hollow of the heels (particularly the hind legs) are inflamed.

Symptoms.—The heels become hot and inflamed, and later on swollen, and at this stage cracks appear in various places. If not promptly attended to, more serious results follow.

Treatment.—Should the animal be in high condition, give a “Black Physic Ball” and feed on light diet consisting of green food, bran and linseed mashes, avoiding all corn for a time. Wash the affected heels every morning with lukewarm water (using no soap), and after carefully drying lay over the sores a pad of tow soaked in the “White Chemical Extract”; this can be kept in place by a moderately tight bandage. When the cracks appear to be healing, it is a good plan to dust over a little ordinary flour so as to form a scab, this to be followed up with cold water bandages and a brisk application of the “Extract.” Keep the animal warm, and the ground clear and free from evacuations. In bad cases subdue all inflammation and tenderness by frequent poulticing with linseed meal or boiled turnips, and then employ the “Grease Ointment” and “Grease Balls” as directed. Clip the hair, if long, from the affected parts, and tie the animal up short so as to prevent him lying down or moving about.

CRIB-BITERS AND WIND-SUCKERS.

Causes.—Both of these vices are contagious, and constitute unsoundness; they invariably arise from idleness and indigestion, leading to loss of condition, colic, etc. As a

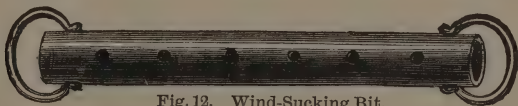


Fig. 12. Wind-Sucking Bit.

rule a “Wind-sucker” is a dirty feeder, or dung-eater. It is very doubtful if these two conditions, Crib-biting and Wind-sucking, are hereditary, although there seems to be an abundance of evidence about the former. Young horses are very liable to contract the above habits, therefore the presence of a Crib-biter in a stable should be carefully avoided.

Symptoms.—A “Wind-sucker” is generally seen to catch hold of the manger with his teeth, arch his neck and then suck in the air with a peculiar noise. With “Crib-biters” the front teeth (incisors) are gradually worn round.

Treatment.—For “Crib-biters” a muzzle or neck strap must be procured from the saddler, which will be found a good preventive; and anchovy paste plastered on the manger will sometimes have the desired effect. Try and fix things in the stable, so that a horse inclined to gnaw cannot get his teeth into them; for this purpose it is a good plan to tack tin on to all exposed edges of boards, etc. For a “Wind-sucker” we recommend a “bit” as shown on previous page. The great object, however, to be attained, is to treat the indigestion, and for this end nothing can surpass the use of “Kossolian Blood Salt,” if given once or twice daily for about a fortnight. Give good food in small quantities and at regular intervals, with a free supply of water; allow plenty of ventilation in stable, and damp the corn and food generally. Feed the animal from the ground.

CURBS.

Causes.—A sudden sprain of the tendon, passing over the seat of curb when leaping or galloping over heavy ground, or at play in a grass park, etc. Sickie-hocked horses are very liable to this condition, and although it constitutes an unsoundness it rarely causes permanent lameness.

Symptoms.—Swelling and tenderness are noticed at the back of the hock, about three or four inches under its projecting point. Lameness is seen at the outset, but gradually disappears when the inflammation subsides.

Treatment.—In the early stages rest the animal as much as possible, and bathe with cold water twice daily, then when dry rub in the “Kurbicura” as directed. If the swelling does not go down after a week or so, it will be necessary to rub in a little of the “Brown Blister Ointment,” for ten minutes once daily, and turn the animal out with a patten or high-heeled shoe on, in order to throw all weight off the injured ligament. Apply light cold water bandages later on. In some cases firing has been found to be attended with very good results.

DEBILITY OR WEAKNESS.

This is a symptom of nearly every disease, and with it the blood becomes deficient in quantity and is pale and thin.



Fig. 13. A typical case of debility showing dropsical condition of the belly, general emaciation, pendulous lip, etc.

As a rule it abounds in albumen, but is wanting in iron and solid constituents.

Symptoms.—General loss of tone to the system, dropsical swellings either in the legs or abdomen, loss of appetite, etc.

Treatment.—Commence by giving a few doses of the “Gaseous Fluid,” for the first two or three days, in a pint of old ale, or stout. Let the diet given be of the best quality, little and often, with occasional sprinklings of the “Kossolian Blood Salt” and see that the drinking water is pure and wholesome. A piece of rock-salt should be placed in the manger. Allow plenty of good grooming.

DIABETES, OR EXCESSIVE STALING.

Causes.—Bad food is the usual cause, such as heated hay, or kiln-dried oats, mouldy corn, etc. Fat horses being fed on soft boiled foods are often affected, or those that have partaken of large quantities of impure water.

Symptoms.—This disease is indicated by two prominent symptoms, viz. : excessive urination (polyuria) and thirst, and in addition to this there is usually a markedly depraved appetite combined with general weakness. Diabetes frequently attacks the whole of the horses in a stable, but is not infectious. The urine is pale and free from sugar. True Diabetes, in which sugar is found in the urine, is seldom seen in the horse.

Treatment.—Keep the patient in a well-ventilated stable, and change the foods which are thought to be the cause of the trouble ; also, in addition to this, give a “ Diabetes Ball ” as directed. The loins (over the bladder) should be covered with a hot cloth or rug frequently. Bran, bruised corn, linseed mash, and the “ Cod Liver Oil Powder ” will be found most useful. Give the horse a good rest until quite well, and for drinking purposes administer the “ Malted Oatmeal Gruel ” made thin instead of water.

DIET DURING FEVER OR INFLAMMATION.

It is always advisable that the drinking water should be within reach of the patient, and frequently changed—the oftener the better—especially in warm weather. Rock-salt should be near at hand, as all animals are extremely fond of it ; indeed, it is a necessity. So essential to health is its regular or frequent use, that animals in a state of nature instinctively travel many miles to saline springs, the seashore, or salt beds, for it. The appetite of sick animals is generally slight and capricious, therefore only small quantities of food should be given at a time, and that which is left should be at once removed.

Bran mash soon becomes sour ; consequently mangers and boxes (particularly wooden ones), in which these have been given, should be frequently scalded out. Sometimes a little grass, sliced roots, or other food will be taken from the hand when larger quantities put into the trough will be refused. The diet should be frequently altered, as sick animals like a change. A good nurse will never be at a loss here, but we may suggest hot or cold bran mash ; malt mash ; boiled barley ; scalded or crushed oats ; linseed boiled to a jelly and added to the above ; good sweet green hay, slightly wetted and lightly sprinkled with “ Kossolian ” ; fresh green grass, roots cut to avoid risk of choking ; lucerne ; gruel ; skim milk ;

scalded hay or hay tea. During the height of fever the appetite is completely lost, and food if taken cannot be digested, so there is no use whatever in trying to force it on a sick animal until there are some signs of convalescence. There should be plenty of good sweet straw bedding, which should be renewed from time to time.

DIFFICULT STALING, OR THICK WATER.

Causes.—This complaint is frequently associated with cart horses, and, unless prompt remedial measures are taken, leads to serious trouble. It generally arises from errors in dieting, or liver disorders, etc. Incontinence of urine can be caused by stones in the bladder or urethral passage, or from imperfect sealing of the navel after birth.

Symptoms.—The patient strains when making water, and what comes away is thick and rather scanty.

Treatment.—Commence by giving a bran mash over night, and in the morning a mild "Black Physic Ball." The next day administer the "Diuretic Powder or Ball" as directed. In four or five days' time start giving a few doses of the "Kossolian Blood Salt"* so as to strengthen the entire system, including the kidneys. Put a rug over the loins for the first few nights, and give the patient a day or two's rest, if possible.

In some cases of difficult staling, it is necessary to have a medicine that will not only act on the urinary organs, but will relieve pain, and for this purpose give half a dose of the "Gaseodyne" mixed with a dose of the "Alcoholic Ether" in gruel, and repeat, if necessary, in half an hour. The diet must be light—such as grass (instead of hay), carrots, bran and linseed mashes, and a little damped corn.

DOCKING.

This operation, which is generally done for appearance sake, but sometimes to prevent swishing of the tail over the reins, has been the subject of much controversy between Veterinary Surgeons and the R.S.P.C.A.

In performing the operation a portion of the tail, varying in length, is selected, and the hair clipped off all round the

* A customer writes :—"My horses frequently get Thick Water during the winter ; but I find a few doses of "Kossolian" soon puts them right."

part. This done, use either the "Special Docking Knife" or scissors, and arrest the bleeding by the application of the hot iron. A little of the "Antiseptic Dressing" should be applied to the stump of the tail from time to time. See that the instruments are perfectly clean, or lock-jaw may follow.

DYSENTERY.

Cause.—This disorder usually arises from eating some acrid plant, etc., and is commonly met with in animals placed on low-lying or damp pastures.

Symptoms.—The dung is usually passed in a semi-solid form and covered with slime, or tinged with blood. It also has an offensive odour. The patient is found to be in pain and breaking out in cold sweats. If the patient is continually dropping saliva on the ground this indicates Gastritis; a rather dangerous complaint requiring special treatment.

Treatment.—Place the animal in a clean and warm stall, and well clothe the body, also bandage the legs (not too tightly). Give the "Curdolix" every four hours, to which add a dose of the "Gaseodyne" until the purging ceases. Inject by means of the "Simplex" Enema Syringe, some cold linseed tea, until all irritating material has been expelled from the bowels. Keep the quarters clean and plait the tail. The after-treatment consists in giving mash and gruel for a week, with occasional doses of the "Gaseodyne," and later on some scalded oats. The drinking water should be given with the chill off, and a course of "Malted Oatmeal Gruel Powders" will be found most beneficial.

ECZEMA.

Causes.—This is an inflammatory eruption of the skin, often seen in the spring and summer months, and is generally due to errors in dieting, want of proper grooming, gross or overheated state of the system.

Symptoms.—This complaint is non-contagious and is accompanied by itchiness and an eruption containing a watery fluid (serum). These pimples soon dry up, and leave scabs or scales, and sometimes bare places on the skin. They may break out in any part of the body; but are usually seen about the neck, shoulders, flanks, and root of tail.

Treatment.—Change the diet as much as possible, giving good hay, a mixture of best linseed cake (broken small) with bran and chaff wetted, and in addition to this give a mild “Black Physic Ball.” All eczematous patches should be first moistened with plain soap and water, so as to remove the hard, dry scurf, after which apply the “Xemos”* as directed. By way of a change use a damped water brush and a soft wisp, in a solution of the “Globe” Disinfectant (1 in 80) and cold soft water, every two or three days. As the disorder usually affects poor or debilitated animals, it is advisable to follow up the above treatment with a course of the “Kossolian Blood Salt” in order to purify the blood and tone up the entire system. An ounce of Bi-carbonate of Potash in the drinking water or bran mash daily does good.

ENEMAS, INJECTIONS OR CLYSTERS.

The above are used for various purposes, viz. :—

1. For emptying the bowels.
2. For killing or expelling worms located in the rectum and large intestines.
3. For restraining Diarrhoea.
4. For nourishing the body when food cannot be given by the mouth.

1. For Emptying the Bowels.—When the nature and progress of a disease necessitate a quick evacuation of the bowels, an enema of warm water is employed, the quantity being from a half to one gallon. The water, or any other fluid used, should be a little above the temperature of the body, say 105 degrees Fahrenheit, and the best instrument to employ is the “Simplex” Clyster Syringe (Quart size, 4s.). The nozzle of the syringe should always be oiled or smeared with soap, and the fluid injected *slowly*, taking care not to frighten the animal in so doing. For Constipation either soap, oil, or a “Black Physic Ball” cut up into small slices, may be added according to circumstances.

* H. A. C., of Liphook, writes:—“I am more than pleased to tell you that your “Xemos” has completely cured my pony of Skin Disease.” This was a very severe and complicated case of Eczema.

2. **For Expelling Worms in Horses.**—For this purpose the enema is composed of oil, but in obstinate cases a full dose of the “Red Worm Mixture” may be added.

3. **For Restraining Diarrhœa.**—To a quart of oatmeal gruel add a full dose of the “Gaseodyne” or “Cur-dolix,” according to the severity of the case.

4. **For Nourishing the Body.**—Gruel is generally the agent employed, but in very debilitating diseases great benefit will be derived if the “Cod Liver Oil Powder” is mixed with the gruel two or three times daily. Eggs or brandy can be added to the nutrient enema with great benefit, in certain cases.

ENLARGED FETLOCK.

Treatment.—Soak a linen bandage in some of the “White Chemical Extract,” and apply night and morning, using a compress of wadding over same and keeping it in place by a dry bandage. A special *Cooling Lotion* can be had if necessary.

“FEATHER” ON SHIRE HORSES’ LEGS.

It is the desire of all Shire-horse breeders to see plenty of good healthy “feather” on their animals’ legs, and for this purpose nothing can equal the “Fetolix,” if used as directed on bottle.

FEEDING.

The horse in a state of nature suffers little from disorders of the digestive organs, but domestication has led to errors in dieting, with all their attendant diseases. We must bear in mind that the stomach of the horse is small in proportion to his bulk, and this shows the necessity of giving food in small quantities and often, if efficiency and condition are to be maintained. The exact amount of food to be given must, of course, be regulated by the nature of the work to be performed and the state of the animal’s health. Long fasts and hurried feeding are to be deprecated, and to work any animal immediately after a full meal is productive of the most hurtful results. If possible, feed four or five times daily, and this about a couple of hours before working.

There is absolutely no economy in feeding on damaged grain or badly saved hay, for it always pays to give the best.

To ensure thorough mastication, particularly in the case of animals inclined to bolt their corn, the practice of mixing chaff with the grain "chop," as it is termed, is to be commended.

Oats form the staple grain for horses in this country, and taken all round they provide the elements of nutrition in better balanced proportions than any other single cereal. Good oats should be firm, heavy, and well-coloured; home oats are the best, and should have an agreeable odour. There should be 38 to 42 lbs. to the bushel. Hunters do well on 12 lbs. of oats, 2 lbs. of beans, and 6 lbs. of hay per diem; and harness horses do not require more than 12 to 14 lbs. of hay per day. Young horses feed and thrive best when they are unyoked and put in the stable both at breakfast and dinner time. A much lighter diet should be fed on Sundays and holidays, giving a little more cut hay and 6 lbs. or 7 lbs. less grain per horse. Crushed oats favour digestion, especially in aged or old horses.

Barley is often used by those who have a damaged sample unfit for malting, but it requires careful introduction, and cautiously increasing, since it tends to cause Surfeit, Diarrhœa, and other disorders of the bowels.

Beans (crushed).—About a couple of pounds, to replace the same quantity of oats for a mixture, is often beneficial. Beans should always be about a year old and should be split.

Maize is now largely used as horse provender in this country, and, despite prejudices against it in some quarters, is a thoroughly useful food for animals of slow draught. It is not, however, suitable for horses doing hard work, or those required to work at a fast pace, or for young growing animals. It is deficient in mineral matter and albuminoids—the elements out of which bone and muscle are elaborated—and in all cases requires the addition of beans or peas to enable the animal receiving it to perform efficient work. One part of beans and four parts of maize contains as many flesh-formers and fat-formers as an equivalent weight of oats, and the albuminoid ratio is fully equal.

Wheat is utterly unsuitable for horse feeding, and to permit the ingestion of any quantity is to run grave risk of Colic, Inflammation of the Bowels, and Laminitis.

Bran is often used freely as a staple food, but should be employed rather as a laxative or a corrective; the broad-leaved variety is most useful and may be given up to 2 lbs. per day.

Peas and Beans are highly nitrogenous and can be given in moderation up to about 4 lbs. per horse daily; but the tough outer skin should always be broken first, and if employed, give less of the other grain.

Linseed in quantity is unsuitable for working horses, although an admirable medicine. Its effects on the skin and coat are most marked; but it is an enemy of condition in the proper acceptation of the term, and animals receiving much of it are soft, sweat easily, and are predisposed to colds.

Hay.—All hay should be a year old and given chopped. It should be selected of prime quality, rather green, of pleasant smell, free from weeds, mustiness, and not overheated. Grasses such as Timothy, Italian Rye, Crested Dog's-Tail, Meadow Fescue, and Fox-Tail are all good.

Chaff mixed with the corn aids digestion; the same may be said of bran and meadow-hay.

FEVER IN THE FEET, FOUNDER, OR LAMINITIS.

This is a general inflammatory condition of the laminae of the feet.

Causes.—Overloading the stomach with grain, feeding on wheat or flour, concussion and over-driving, sudden chills from drinking cold water when over-heated or fatigued, etc.

Symptoms.—This very painful affection appears more frequently in the fore than in the hind feet, although it is by no means rare to see it in all four. On examination the feet are found to be hot and inflamed, and the animal soon becomes feverish and disinclined to move. If the fore-feet be affected they are seen to be pushed out in front, and

the hind ones propped well forward under the belly. Staling is difficult owing to the inability of the patient to place his hind feet in the proper position for this purpose.

Treatment.—The cause must be diligently sought for, and treated accordingly. Remove the shoes, and place the feet into cold water bran or linseed meal poultice,* for three or four days. Give bran mashes and green food, followed by a "Black Physic Ball," this to be followed by the "Vetallenta," twice or even three times daily in the acute stage; for in cases of this description such a medicine is indispensable so as to lower the temperature as soon as possible. Later on apply swabs, which should be thoroughly wetted with cold water every half hour. A most important part of the treatment of Laminitis is exer-

cise, which should be given as soon as the acute stage has passed. If the inflammation continues after the seventh day, apply a little of the "Blister Ointment" around the pasterns, and turn the animal out with

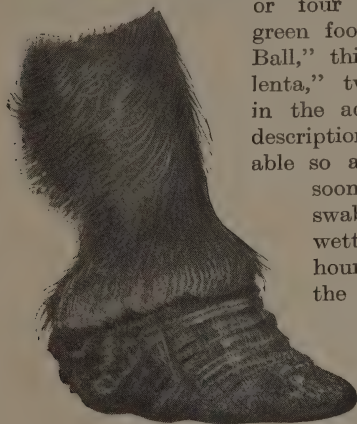


Fig. 14.

A bad case of Chronic Laminitis.

a bar shoe on. The diet may then be gradually altered to a more nutritious one. The shoe must be adapted to the altered form of the foot, the essentials being thin heels and the avoidance of pressure on the weak sole. Ring leathers are useful in diminishing concussion and raising the sole from the ground. Dress the entire hoof with the "Hornicura" twice a week.

FIRING.

This painful operation seems to be going out of date—and rightly too; for quite 50 per cent. of the horses fired are as lame afterwards as they were before. We strongly advise either blistering the part or applying the "Kurbicura," the

* It is sometimes very difficult to keep up the hot poulticing for any length of time, and when this is the case it is best to employ cold ones throughout.

latter acting splendidly in certain cases where a rest is out of the question and the case not too chronic.

There are two kinds of firing, one in the form of "lines," and the other by dots; the former being better adapted for Curbs, Ringbones and damaged back tendons, and the latter for bony enlargements such as Splints, Spavins, etc. This operation should be performed by a qualified "Vet."

FISTULOUS WITHERS AND SIT-FASTS.

Cause.—Fistulous Withers are due to dirty and ill-fitting saddles or collars, or from one horse biting another, etc.

Symptoms.—It first appears as a swelling on the Withers which later on develops into a deep ulcer, and may extend down to the bone; and when this is so, professional veterinary aid must be called in.

Treatment.—A complete rest is needed, and keep the bowels open by an occasional mild "Black Physic Ball," green-meat and mashies. The abscesses should be freely laid open, so as to allow the pus to escape, and then treated as an ordinary wound with the "Brown Chemical Extract"* or "Gall Cure." With a Sit-Fast, the dead hornlike substance or core must be carefully cut away with a knife, and then treated as above.

Prevention.—Always wash and oil the collars and saddles occasionally so as to keep the surfaces clean and pliable. A damp sponge and a cake of good Harness Soap should always be kept in the curry-comb box. Some horses have naturally very tender skins, and when this is the case the withers, etc., should be sponged occasionally with the "Sore Shoulder Lotion." (*See also Sore Shoulders and Saddle Galls, page 72.*)

* Mr. Isaac Duclos, "Fanguche," Chimbote, Peru, writes:—"I tried your 'Brown Chemical Extract' on a magnificent carriage horse for 'Fistulous Wither.' I must confess that I did so with considerable doubt, as it was for the first time, after using so many other preparations without any result at all. A few days after using the said 'Extract,' I had the satisfaction of seeing that my horse was almost cured, and a month after I started the treatment, the 'Fistula' had disappeared completely."

FLIES ATTACKING HORSES.

In the sultry periods of the year Flies are very troublesome to horses; so much so that it is often dangerous to ride or drive them.

Treatment.—Apply a little of the “Anti-Fly Dressing” by means of a sponge or rag between the ears, neck, flanks, etc. Flies of all kinds are thus kept away and the animal is thereby allowed to graze or work in comfort.

FOALING TABLE.

Showing at a glance when eleven months will expire, from any day throughout the year:—

January	1	..	Dec.	1	July	1	..	June	1
„	14	..	„	14	„	14	..	„	14
February	1	..	Jan.	1	August	1	..	July	2
„	14	..	„	14	„	14	..	„	15
March	1	..	„	30	September	1	..	August	2
„	14	..	Feb.	12	„	14	..	„	11
April	1	..	March	2	October	1	..	Sept.	4
„	14	..	„	15	„	14	..	„	12
May	1	..	April	1	November	1	..	October	5
„	14	..	„	14	„	14	..	„	15
June	1	..	May	12	December	1	..	Nov.	1
„	14	..	„	15	„	14	..	„	14

FOMENTATIONS, POULTICES, GRUELS, MASHES, LINSEED TEA, Etc.

Fomentations.—In some cases we make use of hot fomentations so as to soothe the damaged or diseased parts, and for this purpose simple hot water is usually all that is necessary, but we can add sedative agents such as the “Gaseodyne” when there is acute pain. To be of any use these fomentations should be kept going for some time, and the temperature maintained by means of continually adding a little fresh hot water. It should be as hot as the stripped elbow can comfortably bear. In fomenting recent wounds or injuries, the sponge or flannel should not be applied directly over the seat of injury, but a little higher up, so that the

water is allowed to trickle over the inflamed area. After this the part should be lightly covered with flannel to prevent a chill from rapid evaporation. For the legs (below the knees or hocks) we can use a good deep bucket of warm water, or flannel bandages wrung out of warm water, and carefully put on the leg, with another dry flannel bandage over it, or haybands frequently soaked with hot water. This will retain the heat and moisture for some time, but should be frequently changed.

Poultices are used to apply heat and moisture to the part, but it is also necessary to keep them up to an even temperature; for if they "go dry" they tend to do more harm than good. Poultices are variously made with bran and linseed meal, or better still linseed oil, but good ones can also be made of boiled and mashed carrots or turnips. Linseed meal also makes an effective poultice if mixed with scalding water, and a little olive oil. When wounds give off an objectionable smell a capital deodorizing poultice can be made from linseed meal to which add a little ordinary powdered charcoal. Just before applying it, sprinkle its surface with a little more charcoal. A boiled carrot poultice is most useful in ill-conditioned ulcers or irritable sores, but when the irritation and pain are excessive the addition of a little "Gaseodyne" to any sort of poultice will have a rapid and soothing effect. As a stimulating poultice, for chest affections, etc., take equal quantities of mustard and linseed meal with a sufficient quantity of boiling water.

Mashes.—A bran Mash is a most useful food for the sick or convalescent patient, but its efficacy depends largely on how it is made; so we give a few details respecting its preparation. Place three pounds of bran in a clean bucket and to this add three pints of boiling water; cover this over with a sack, and leave it for half an hour to cool. Add a little salt to the mash before it is given and do not give it too hot. This mash being slightly laxative, has a cooling effect in fevers and inflammations. A mash of linseed and bran is most valuable in cases of Catarrh, Lung Disease, and most digestive troubles. If the patient will not touch such a mash, add a little powdered or oil of aniseed to it, and have it carefully horned down as a drench. Let the bran and

linseed mash be prepared by slowly boiling for quite two hours, half a pound of linseed to one pound of bran; this to be mixed together in one gallon of water. An ounce of salt may be added.

Linseed Tea.—When a patient refuses all solid foods, mash, etc., it can sometimes be tempted to drink a little linseed tea. To make linseed tea take half a pound of linseed and add just sufficient water to make it into a paste, then add a gallon of boiling water. This is best made over night, and allowed to settle, drawing off the liquid in the morning and offering it as a drink to the patient.

Hay Tea.—This is usually made as follows, viz.: First of all warm a bucket with boiling water, and then fill it with some good old hay; fill up with boiling water, cover up, and allow to stand until cool. After this pour off the liquid, and always give it freshly made.

GLANDERS AND FARCY.

Cause.—These diseases are more or less identical, and are due to the same micro-organism, known as the *Bacillus Mallei*, and it is interesting to note that the nasal discharge from Glanders will often produce Farcy, whereas the matter from a Farcy-bud may produce Glanders. Unsanitary conditions predispose to Farcy, but it does not originate *de novo*. The disease is capable of transmission to man by inoculation.

Symptoms.—Chronic Glanders, the form most commonly met with, is denoted by a discharge of sticky pus from one nostril, usually the left, and the gland or glands beneath the jaw are hard and fixed to the bone. The coat looks ragged, and as the case proceeds the discharge becomes streaked with blood. In Farcy, there is swelling of one of the limbs, particularly the hind ones, and thickening of the lymphatic vessels on the inside of the leg, which feels like cords to the

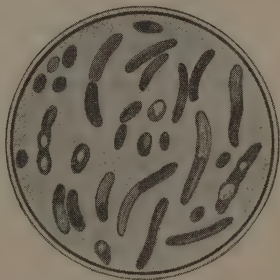


Fig. 15.
The Micro-organism of Glanders.
(*Bacillus Mallei*).

touch. The formation of ulcers, or Farcy-buds, quickly develop and these discharge a dirty, glairy, unhealthy pus.

Treatment.—Being included in the schedule of the Contagious Diseases Act in this country, a case of Glanders or Farcy must be at once notified to the nearest police constable or inspector of the local authority. Thorough disinfection of the stall should be resorted to at once, by employing the "Globe" Disinfectant.

Note.—It frequently happens that a disease breaks out somewhat similar to Farcy, but in no way infectious; in these cases treat as for "Weed" (see page 87), and for precaution sake isolate the patient at once. In some parts abroad, such as Jamaica, etc., the restrictions as to treatment are not nearly so severe. In these cases the Grease or Farcy Balls and Ointment will be found very beneficial if used as directed, especially if the disease is taken at the onset.

GORGED STOMACH, OR STOMACH STAGGERS.

Causes.—This disorder is produced by either irregularity of diet or over-engorgement of the stomach, and often takes place after a journey and long fast, or from breaking loose and getting at the corn bin. It is frequently brought on by the animal having had a quantity of badly fermented hay.

Symptoms.—The animal appears dull, and the head is hung down, or resting probably on the manger; later on the abdomen becomes painfully distended with food and gas, and costiveness follows. If the patient is not quickly relieved, a more dangerous form of malady presents itself, when immediate slaughter is advisable.

Treatment.—On first symptoms of the disorder, get the bowels to act by administering a "Black Physic Ball," as described in footnote on page 16. Repeat this if necessary, and administer warm soap and water injections per rectum twice daily. Relieve the abdominal pain by hot fomentations and full doses of the "Gaseodyne," given in a pint of warm water or gruel, and repeat in four hours if no better. For several days afterwards the diet must be light and laxative, omitting straw or hay, and later on gradually return to the horse's usual food.

GREASE AND GRAPES.

These are common and well-recognized diseases and may occur in any of the limbs, but are usually observed in the hind ones, which are more exposed to wet and filth. Well-bred cart horses are not so liable to "Grease" on account of the long hair found about the heels, which protects the parts from the chills consequent upon rapid evaporation. Round-legged, small-boned, and under-bred animals are most subject to the above disorders.

Causes.—Washing the legs with warm water after active exercise, and allowing them to dry by evaporation; the practice of clipping the hair away from the back of the fetlocks; too much corn and little exercise, or the use of inferior food. Greasy legged mares and stallions invariably beget stock with a tendency to Grease.

Symptoms.—Grease first shows itself by a dry and scurfy state of the heel, from which an oily and sticky discharge soon exudes, causing considerable heat and itching. The loose hair becomes matted together and then dries and adheres to the skin. Swelling ensues, and cracks and fissures take place about the heel and upper portion of the fetlock. If this troublesome affection is not promptly treated the legs swell to an unusual size, and fungous growths appear, commonly termed "Grapes."



Fig. 16. A case of Grease.
A. Location of disease.

Treatment.—For Grease take the animal off work if possible, and place in a roomy loose box; wash the heels night and morning with some ordinary toilet soap and tepid water, using a soft nail brush for the purpose. Dry with a soft towel and gently smear over the affected parts a little "Grease Ointment" as directed on tin. If heat

and soreness are present, apply a turnip and bran poultice, for a day or two, and then dust on the sores a little ordinary soot, before using the Ointment. Feed on a low diet consisting of mashes, carrots, green meat, etc.; but on no account give

corn or anything heating. A "Grease Ball" should be given as directed; but if the legs show a tendency to fill ("Water Farcy") give an occasional "Diuretic Ball" instead, and resort to repeated hand rubbing. In bad cases of Grapes it often becomes necessary to burn them off with a hot iron, and to tie the animal up short in a narrow stall, so as to prevent him lying down or moving about, afterwards washing with a solution of the "Globe" Disinfectant (1 in 40). A course of "Kossolian Blood Salt" will be necessary afterwards; and acts as a splendid preventive against the disease returning.

GROOMING.

If horses are left ungroomed and undried after work; they become very liable to Chills, Skin Disorders, Sore Backs, Collar Galls, Mud Fever, also Parasitic Diseases. Half an hour spent in grooming is well rewarded. There is nothing to equal an occasional dose of the "Kossolian Blood Salt" for giving a horse a bright eye and glossy coat, and for this purpose it can be mixed with the food.

HARD SWELLINGS, ENLARGED KNEES, Etc.

Treatment.—Bathe and well rub in the "Brown Chemical Extract"; but if the swelling does not yield to the above, a smart application of the "Red Blister Ointment" had better be resorted to again and again. It is very essential to give an occasional "Diuretic Ball" so as to assist in the absorption of the swelling. Avoid giving corn until cured.

HIDE-BOUND, HUMOUR, AND OFF APPETITE.

Cause.—These conditions either accompany disease or are the result of poverty, indigestion, irregular teeth, impure blood, or the presence of worms.

Symptoms.—With Hide-Bound, the skin is dry and hard, owing to want of oily matter, and appears as if it were drawn tightly over the animal's body. As a rule animals affected with this complaint look dull and listless, with a varying appetite.

Treatment.—This depends upon the cause. Let the diet be light and laxative, such as mashies, boiled linseed, old and sweet hay, pulped carrots, chopped food of all kinds, and give a "Black Physic" Ball. After the Ball has set, give a little walking exercise or moderate slow work daily for a few days, then give small quantities of food at short intervals, such as old oats, a few beans and peas, and to mature horses a little maize may be added. At this stage give a course of the "Kossolian Blood Salt" as directed, so as to improve the quality of the blood.

Pay strict attention to cleanliness by the employment of the "Globe" Disinfectant in the stall, and examine the teeth for irregularities. All spots or sores on the skin should be cleansed and anointed daily with the "Xemos," and gradually increase the corn (crushed oats) in a week or ten days' time. If worms are suspected they must be dealt with (see page 89).

HORSE TAKEN UP FROM GRASS.

A horse that has been idle from work for some time, or just taken in from grass, is what is technically known as "soft" and should not be put at once to severe labour. The horse that has been free from coughs and colds while in the open air often develops both when brought into a warm, and perhaps ill-ventilated stable, and to avoid these the animal should at first be placed in a cool, airy loose box or comparatively cold stable, where the air is pure and the ventilation good. For the first few days bran mashies and a little hay should constitute the diet, and the animal receive a mild "Black Physic Ball," as directed. When the physic has "set," put him to walking exercise, and introduce the corn very sparingly, giving, say, 4 or 5 lbs. for the first few days, and after that, let it be increased by 1 lb. every alternate day until the full allowance has been reached. Exercise must be increased as the muscles gain tone and the "wind" improves. While becoming accustomed to the changed diet and conditions under which the animal now lives, the "Kossolian Blood Salt" should be given occasionally, as it acts as an alterative and a mild vermifuge. There is no necessity to rug a horse up immediately he is taken up from grass.

HOW TO DRENCH A HORSE.

Get an assistant on the left-hand side to elevate the animal's head, and to keep the mouth open. Being on the right-hand side of the patient, gently pour the fluid down the throat by placing the nozzle of the "Eclipse" Drenching



Fig. 17. How to Drench a Horse.

Bottle at the side of the mouth, just in front of the grinders. (not between the teeth). Always let the nose of the bottle touch the palate first as a kind of warning before pouring any of its contents into the mouth. After the drench has been given still keep the patient's head up for a little time so as to ensure its being swallowed properly. Let the liquid trickle in, for a drench cannot be given too slowly. If coughing ensues, the head should be *instantly lowered*, and start again.

HOW TO GIVE A BALL OR POWDER.

The administration of **Balls** to horses is, of course, much practised, but requires a certain amount of skill on the part of the operator. In giving them, the "Balling Instrument" will be found useful, as it prevents the nasty scratches which often result from giving them by the hand. Get an assistant to steady the head, but see that he does not hold it too high; and before giving the ball it is a good plan to moisten it with a little linseed oil. The operator should take the tongue with the left hand and hold it well out of the mouth, then, grasping the ball with the fingers and thumb of the right hand, pass it down the centre of the mouth and drop it just behind the tongue; but be careful that the working of the tongue does not carry the ball between the molar teeth. At this stage close the mouth with the hands, and the patient will swallow the ball.



Fig. 18.—How to give a Ball.

Powders will be eaten in the food by most animals. The food should be slightly damped to cause the powder to adhere and prevent it being blown out, or getting into cracks and corners of the manger. Where the appetite is defective, or in cases of delicate feeders, the powder may be stirred into a paste with honey, or treacle, and given by plastering on the tongue and amongst the molar teeth with a piece of lath or a wooden spatula. If only a small quantity of Powder is required to be given, and it is desired to act quickly, a safe and convenient method is to place it in a dry spoon, and having caught hold of the tongue pass it well back into the mouth. If the Powder is a fairly large one, it must be mixed either with water or gruel and given as a drench, or wrapped in tissue paper and given as a ball.

Note.—With refractory horses a "twitch" must be employed.

HUNTERS BREAKING OUT OR SWEATING AFTER BEING "DONE UP" FOR THE NIGHT.

This is a trouble that is frequently experienced in hunting stables, especially towards the end of the season, and denotes debility of the system.

Treatment.—Give half-bottle doses of the "Gaseous Fluid" in the drinking water; but to get the animal accustomed to this, pour a little in while he is drinking, to start with, and increase by degrees. In a short time the patient will take the half-bottle dose quite readily in half a bucketful of water, or even less. Feed well, little and often, and give plenty of hand massage to the legs and body.

INDIGESTION AND UNTHRIFTINESS.

Cause.—Indigestion occupies the foremost rank of disorders amongst domestic animals, and yet it is seldom detected until its severer forms are exhibited. It becomes important from the many diseases which arise from it, and may be looked upon as a functional derangement of the stomach or intestines, caused generally by inferior food, irregular feeding, or bad teeth.

Worms form another cause for indigestion and it is always advisable to examine the dung and, if any are found, treat as directed (*see page 89*).

Symptoms.—When simple indigestion exists, the bowels become irregular and distended, and food passes from them unchanged. The appetite goes off, the coat stares, and the animal looks round at his flank, and does not thrive. If caused by bad food, this is commonly seen in an unmasticated state in the fæces, probably with Diarrhoea.

Treatment.—The bowels should be acted upon by bran mash and crushed linseed; also by a mild "Black Physic Ball" given in the morning on a fasting stomach. If horses are allowed to drink immediately after feeding, the water is apt to flush some of the undigested food into the intestines, and this is a fertile source of colic and indigestion. Always water, then, before and not after feeding.

Change the usual mode of dieting as much as possible, and give all food at frequent intervals, sprinkling it with the "Kossolian Blood Salt," as directed. If the teeth are rough

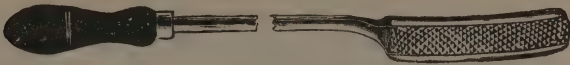


Fig. 19. Tooth Rasp.

or projecting they should be rasped. Most people expend a lot of unnecessary strength in trying to level the teeth, and never succeed. The proper mode of procedure is to take a specially made rasp and file down the inner edge of the lower teeth and the outer edge of the upper ones. The teeth will then level themselves at work.

INFLAMMATION OF THE BOWELS, OR ENTERITIS.

Causes.—Anything which is likely to irritate the wall of the intestine is a likely cause of inflammation of that organ; the irritant may be taken in the food or accidentally.

Symptoms.—These are much the same as under Colic, only much more severe, and the pain is continuous. The patient looks anxious and perspires freely.

Treatment.—Place the patient in a good loose box, free from draughts, and well clothe and bandage; also give from one to one and a half pints of linseed oil, to which add a full dose of "Gaseodyne," and repeat the latter in gruel every three or four hours until relief is obtained. Without delay procure plenty of boiling water and incessantly bathe the bowels with hot wrung flannels, upon which sprinkle a little turpentine. In order to keep up a continuous heat it is a good plan to put about a peck of bran into a sack and, having poured boiling water over it, apply to the bowels. Frequent injections of soap and water, carefully forced up the rectum by means of the "Simplex" Enema Syringe, are of great service. Keep the animal on a spare diet, consisting at first of bran mash or the "Malted Oatmeal Gruel," *but avoid walking exercise.* After this treatment the

strength of the animal must be sustained by better food and half-bottle doses of the "Gaseous Fluid" twice or three times daily, returning very cautiously to the usual diet.

INFLUENZA OR "PINK EYE."

Causes.—This is generally due to a morbid condition of the blood, but contagion and all debilitating influences such as bad stabling, defective ventilation, overwork, or bad food can also produce it. Influenza is most prevalent in the Spring and Autumn and the incubative period is about four or five days.

Symptoms.—At first dulness with loss of appetite and shivering fits are noticed, with irritation of the lining membrane of the nose, from which there escapes a copious watery discharge. Soon this discharge becomes thick, and the parts about the throat and windpipe are very painful and sensitive; swallowing is difficult, and the pulse runs high and full. If the eyelids be turned down they present a pinkish appearance, hence the term "Pink Eye." The eyes weep freely, and the mouth is hot and dry. The majority of cases are accompanied with great prostration and general debility, so much so that the animal is unable



Fig. 20.
A case of "Pink Eye."

to stand; it refuses food and the pulse becomes rapid and small.

Influenza differs from a common cold in the loss of appetite and the great prostration which it induces, together with high fever, the temperature often rising to 104° or 105° Fahrenheit.

Treatment.—Isolate at once the affected animal from the rest, and place in a well-ventilated and comfortable loose box; for the disease is highly infectious. This done, commence by giving a dose of the "Vetamenta" night and morning,

or even oftener, or if this be not at hand, a few small doses of the "Red Drench," so as to check the feverish symptoms. Past experience of former outbreaks, both in this country and America, goes to show that those horses escaped the lightest and developed the fewest dangerous or unpleasant sequelæ, that were at once taken out of work and *carefully nursed and tended*. Allow a good supply of fresh water, made slightly tepid. The legs up to the hocks and knees should be well bandaged, and the patient kept warm.

Feed in the early stages on warm bran mash, green food, a little hay and a few slices of carrot, etc.; and last thing at night give a dose of the "Alcoholic Ether,"* and carefully clothe, so as to encourage the skin to act. Keep the strength up by giving the "Gaseodyne," two or even three times daily, as well as good nourishing food or drink, such as linseed gruel, oatmeal gruel, new milk, eggs, port wine, etc. Steam the nostrils frequently over a bucketful of hot water, and keep them clean by sponging with a weak solution of vinegar and water. Should the throat be sore and swallowing difficult, rub in smartly the "Brown Chemical Extract." When the acute stage has passed give half-bottle doses of the "Gaseous Fluid," in one or two pints of warm stout or ale twice daily for three or four days, and allow gentle exercise, especially if the legs have "filled." Constipation must be overcome by enemas and not by physic; and on no account allow the patient out until he is *well on the road to recovery*.

Prevention.—When the disorder is known to be prevalent in a district, an occasional dose of the "Kossolian Blood Salt" forms the best preventive; for it has been proved that Influenza is invariably due to a morbid condition of the blood. Let the stalls and stables be well cleansed with the "Globe" Disinfectant, and allow plenty of ventilation. It is a wise precaution to take the temperature of every horse daily during an outbreak, so as to avoid working an animal sickening for the complaint.

Immediately an animal is found to have a rise in temperature give a few doses of the "Vetalenta" at once and keep him warm.

* When a number of animals are attacked and there is only time to give an all-round medicine so as to combat the fever and exhaustion, we recommend the "Special" Influenza Drinks prepared for immediate use: no mixing required. See Price List.

INJURIES FROM DEFECTIVE GAIT.

Treads are injuries inflicted on the coronet by the shoe of the opposite foot, and are most common in horses with heavy shoes or high calkins. Neglected cases result in Quittor. Use low calkins, and reduce the width of the shoes at the heels. Bathe with cold water, and having removed all jagged edges of wound with a pair of scissors, dress with the "Chemical Extract," daily.

Over-Reach is an injury to the heel of the fore-foot caused by it being struck by the toe of the hind shoe. Prevent this by rounding off the inside edge of the hind shoe, and treat as above.

Cutting or Brushing is injury to the inside of the fetlock joint from bruising of the shoe by the opposite foot. It is seen principally in horses that are young, debilitated, overworked or driven beyond their pace. See that the shoe fits the hoof of the cutting foot, which should be rasped on the inside to reduce it. Treat as above.

Speedy-Cut is a dangerous defect in gait, and means an injury inflicted under the knee-joint by the shoe of the opposite foot. It occurs when trotting fast or lifting the feet high; but this seldom occurs unless the horse is tired or over paced. Such horses should be shod "close" on the inside and the heel of the foot that strikes should be kept low.

Forging or Clicking is not an injury; but it is a most unpleasant noise made by striking the hind shoe against the fore one. In the case of young, green, tired, debilitated or ill-conditioned horses, use level shoes without calkins, and get the animal into hard condition.

Knuckling Over.—Support at back with wide thick heel, either by a wedge or calkin, and thin the shoes; this will favour the joint. Repeated mild blisters with the "Red Blister Ointment" to the coronet at intervals of six weeks will do good. Weakness is often the cause of this dangerous complaint.

General Treatment.—In addition to preventing further injury, the wounds inflicted by either of the above demand attention. Cleanse the parts by fomenting with warm water, into which a little of the "Globe" Disinfectant

should be mixed, twice daily. When dry gently rub in a little of the "Chemical Extract." Later on a linen rag or a bit of cotton wadding soaked in the "Extract" may be placed over the seat of injury and kept in place by a light bandage. If the bruise hardens apply the "Blister Ointment" as directed.

JAUNDICE, YELLOWS, OR LIVER DISORDER.

Cause.—The liver of the horse, the chief but by no means the sole function of which is the secretion of bile, is not so frequently the seat of derangement or disease as in man and some other animals. One reason probably is that the horse has no gall bladder, the bile passing directly into the intestine through a simple duct. Aged horses, heavily corn-fed and kept all their days in town stables, are the chief sufferers.

Symptoms.—These are indicated by irregularity of appetite, constipation, dry harsh condition of skin, and a yellow tinge to the eyes and urine, arising from the entrance of bile pigments into the circulation. An animal becomes dull and sluggish, but evinces no pain.

Treatment.—The action of the bowels should first be promoted at once by bran mash and a mild "Black Physic Ball"; following this give a few doses of the "Liver Drench" as directed. The diet in those cases arising from overfeeding should be easy of digestion and laxative in character. Green-meats or carrots, according to season, or a run at grass, will materially assist in restoring the functional activity of the liver. A cool stable, moderate exercise, and sprinkling the food at frequent intervals with the "Kossolian Blood Salt," say three or four times a week, will rapidly restore tone to the entire system, including the liver.

JOINT-EVIL, OR NAVEL-ILL IN FOALS.

Cause.—This denotes a septic inflammation of the navel-string, with suppuration, produced by micro-organisms entering the navel opening after birth. It is common in foals up to a fortnight old.

Symptoms.—The patient appears dull, refuses its milk, lies stretched out on its side, and on examining the navel it is found to be hard and swollen.

Treatment.—The swelling must be opened at its lowest part with a knife, so as to permit the pus to drain away. After this bathe twice daily, and then anoint with the "Antiseptic Dressing." After this get a piece of flannel, and having wrung it out of hot water, fold it four or five times on itself, and apply it to the navel. This can be kept in place by a bandage round the body. Give a small dose of the "Red Drench" daily, and avoid exposure to cold and wet.

Prevention.—Always tie the navel-cord about an inch below the skin with a piece of string soaked in the "Chemical Extract," and then disinfect the stump with a solution of the "Globe" Disinfectant once daily for about a week.

LAMPAS.

Cause and Symptoms.—When a young horse is casting its front teeth or nippers, the gums behind the upper ones become swollen and tender. This swollen condition of the gums often overhangs the incisor teeth to such an extent as to render the horse incapable of taking up and masticating his food properly. This induces "quidding," dulness, and unthriftiness.

Treatment.—If the bars are very inflamed and swollen the palate may be lightly scored with a sharp knife or, better still, a Lampas Lancet with regulating slide, as illustrated. Care must, however, be taken not to injure the artery which lies underneath the palate. After the operation dab on a little of the "Alumine" by means of a piece of tow or sponge twice daily,

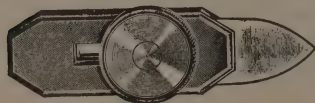


Fig. 21. Lampas Lancet.

and give a dose of the "Red Drench" in a bran mash. Feed on a soft cooling diet such as warm mashies, gruels, etc.; and it is advisable to give a dose of the "Alcoholic Ether" for three nights in succession. In all cases of "Quidding" examine the teeth at once, and make sure that the feeding is correct.

LICE.

Causes.—Lice are, of course, not produced by poverty any more than Mange, but poverty and lice are generally associated, and they thrive best on the bodies of diseased, ill-fed, and neglected animals. A form of lousiness occasionally met with is due to invasion by poultry lice, which produces so much irritation as to cause a horse almost to tear himself to pieces. Fowls, then, should on no account be permitted to roost in the stable, nor should the hen-house be adjacent to it. Barley straw is commonly believed to harbour lice, and for this reason it should not be used as a bedding material.

Symptoms.—Careful examination of the skin with a pocket lens will soon reveal the lice amongst the hairs or beneath them, especially in the regions of the sides of the neck, withers and rump. Loss of condition or unthriftiness are the usual accompaniments. There appear to be three kinds which vary in colour from dark brown to yellow.

Treatment.—The curative measures recommended in cases of Mange are generally applicable where lice are harboured. The "Lice Wash" must be used as directed on the tin; but it is advisable to choose a warm day, if possible, for dressing the animal, and in doing this start at the head, ears, poll, mane, tail, and extremities, so as to cut off the retreat of the parasites; for as a rule they run before dressing to these harbours of refuge. Later on give better food and small doses of the "Kossolian Blood Salt," so as to help on to condition and purify the blood. Every nook and corner of the stable and fittings must be thoroughly cleansed and whitewashed, to which add the "Globe" Disinfectant. The clothing, harness, brushes, etc., must also be cleansed, and the eggs of the vermin destroyed by boiling water. It often becomes necessary to dress the horse all over in bad cases and to repeat the dressing within a week, as the "nits" are not

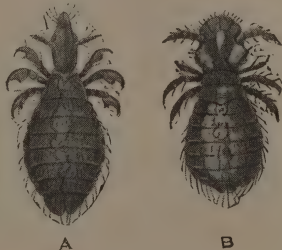


Fig. 22. Horse Lice.

A. *Hæmatopinus macrocephalus*.B. *Trichodectes pilosus*.

destroyed until they hatch out, and if not acted on at this stage they are bound to reinfest the animal.

MALLENDERS AND SALLENDERS.*

Cause.—This is a scaly form of Eczema generally due to filth and neglect, but some authorities think that, as in the case of Weed or Grease, there exists a predisposition by breed. It is commonly seen in cart horses when out of condition.

Symptoms.—When the skin becomes inflamed behind the knees it is termed "Mallenders" and when in front of the hocks "Sallenders," but with both conditions there is a watery, scurfy exudation and thickening of the surrounding tissues.

Treatment.—Commence by giving a "Black Physic Ball" as directed, and change the diet as much as possible. Good hay, a mixture of best linseed cake (broken small) with bran and chaff wetted, will be found of great benefit, and to this may be added a small quantity of the "Kossolian Blood Salt," twice daily. The affected parts must be anointed once daily with the Sulphuretted Ointment, so as to soften and remove the dry hard scurf. This must not be washed off for a week or so. An occasional "Diuretic Ball" may be given once or twice a week in preference to the "Black Physic Ball," provided the bowels are already loose.

MANGE OR ITCH.

Cause.—This is a disease of the skin occasioned by the mange parasite or acari, which varies in length from a fortieth to a hundredth part of an inch, according to the species. At one time it was considered to be brought about by either poverty of the blood, starvation, or want of proper sanitary arrangements, and to follow Surfeit and Hidebound. These are, however, merely favourable conditions for mange, and tend to increase the number of the parasites, which are very unfavourable to the patient—since they decrease his powers of resistance.

* NOTE.—A Special Ointment can be sent for severe and complicated cases if full particulars are given.

Without the presence of the parasite the disease cannot properly be designated Mange. The horse is subject to the attacks of three different Mange insects. One parasite (*Dematodectes Equi*) attacks the head, neck, and trunk, and bores

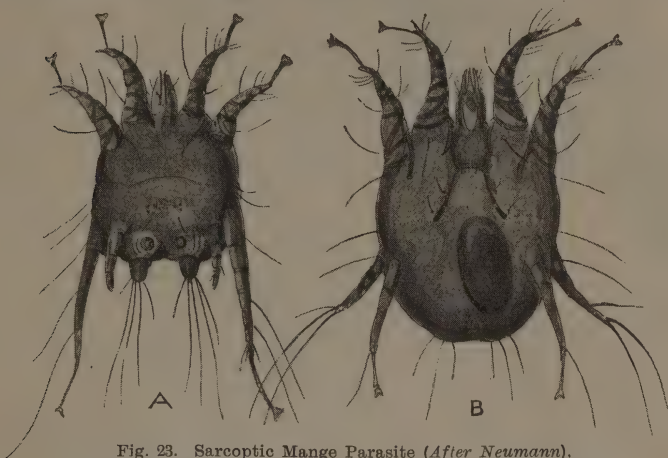


Fig. 23. Sarcoptic Mange Parasite (After Neumann).

A. Under surface of male.

B. Under surface of female.

inside the skin. Another (*Symbiotes Equi*) generally affects the pasterns, and lives chiefly on the skin (see page 75 under Stamping the Feet, etc.). The third (*Sarcoptes Equi*) is rather uncommon, for it burrows through the skin in the form of galleries.

Symptoms.—The diagnostic symptoms are based upon the finding of the parasite, which although very minute in size can usually be detected with the aid of either a three-fold pocket lens or microscope. Professor McFadyean says it is in the pin-like places just before they commence to scab that the parasite is generally located, and as soon as these form they disappear. Psoroptic mange is the most common variety and the most highly contagious, either mediate or immediate contact with an affected animal being sufficient to produce it. Mange usually begins at the roots of the hair at the mane, neck, and tail, and if not checked by judicious treatment will rapidly spread all over the body and from the irritation produced the animal rubs the hair off and bites the

skin. All Mange insects are provided with hook-like appendages which makes them difficult to detach. A number of white scabs are produced, and when these fall off large blotches remain. If the irritated parts be touched by the hand the patient shows his satisfaction by moving his lips and muzzle. Mange is frequently observed amongst Cavalry horses during war, and causes great loss to the effective strength.



Fig. 24. Sarcoptic Mange.

hair clipped off closely around the irritated places. The hair of the loins should not be clipped off; but all other places must be done, for it greatly facilitates the action and penetration of the dressing.

Having done this, well wash the entire animal with soft soap and warm water, and having dried with a cloth, rub in the "Mange Wash"* with a brush as directed. Wash this dressing off in forty-eight hours and repeat the dressing a few times, as there are bound to be a few stragglers left. Give a "Black Physic Ball" and feed on a light, digestible diet, such as green food, bran mash, boiled linseed, malt, and carrots. The after-treatment consists in giving small doses of the "Kossolian Blood Salt" once daily for a week or ten days, as an alterative and blood purifier. Racks, mangers, stalls, floors, etc., should be scrubbed with carbolic soap and the walls limewashed; after which use the "Globe" Disinfectant freely. All bedding in the stable at the moment of dressing the horses should be removed and burned, especially any hair removed from the affected animals, or the trouble will break out again. Whether Mange is generalized or not, it is always advisable to dress the entire body.

Clothing and harness which have come in contact with a mangy horse must on no account be used for any other animal, without being thoroughly cleansed as described above.

* If the disease is an obstinate or neglected one, a stronger preparation such as the "Xemos" must be used.

If the diseased animal has been in the fields or straw yard, all posts, troughs, walls, etc., must receive a thorough scouring with hot limewash, and afterwards sprinkled with the "Globe" Disinfectant—this is very important.

Note.—For examining "Scrapings" from suspected cases of Mange under the microscope or magnifying glass, place them in a watch glass and cover with a little proof spirit, then add a small quantity of water. When the motion set up by the addition of the water has ceased examine the scrapings under a low-power lens. Pour off the spirit and water, and add a little Liquor Potassæ, which renders the parasites easily discernible.

MARE NOT CLEANSING.

As a rule a mare cleanses a few hours after foaling; but if this fails to take place give a few doses of the "Cleansing Drench" as directed, and syringe out the uterus with a solution of the "Globe" Disinfectant. If she is weakly give a dose or two of the "Gaseous Fluid" in some warm ale or stout and feed on good light food, little and often. If after giving the "Cleansing Drench" the after-birth still remains, then call in a qualified "Vet" at once, as a surgical operation is in all probability needed. In many instances mares get "Foundered" with the above condition; when this occurs remove the shoe and have the leg wrapped up in straw bands. For further details, *see* pages 30 and 31.

MEASURES AND WEIGHTS.

The following information taken from Finlay Dun's book on "Veterinary Medicine" may be useful to some of our readers:—"Common Tumblers contain from 8 to 10 fluid ounces; a Pint contains 20 fluid ounces; Breakfast Cups 6 to 8 ounces; Teacups about 4 to 6 fluid ounces; Wineglasses about 2 fluid ounces; Tablespoons half a fluid ounce; Dessert spoons 2 fluid drachms; and Teaspoons 1 fluid drachm of 60 minims, or drops. Such measures, however, are only approximately correct."

It must always be remembered that in giving medicines the doses can always be increased or diminished according to age and constitution. In critical cases a much larger dose is often imperatively called for.

APOTHECARIES' WEIGHT.

- 1 Grain gr.j.
- 1 Scruple, \mathfrak{z} j.=20 grains.
- 1 Drachm, \mathfrak{z} j.= 3 scruples = 60 grs.
- 1 Ounce, \mathfrak{z} j.= 8 drachms= 480 „
- 1 Pound, lb.j.=12 ounces =5760 „

PHARMACOPŒIA WEIGHT OF MASS.

- 1 Grain, gr.j.
- 1 Ounce,oz.j. \mathfrak{z} j.=437·5 grains.
- 1 Pound, lb.j.=16 ounces=7000 grs.

MEASURES OF CAPACITY.

- 1 Minim, min. \mathfrak{m} j.
- 1 Fluid drachm, \mathfrak{f} \mathfrak{z} j.=60 minims.
- 1 Fluid ounce, \mathfrak{f} \mathfrak{z} j.= 8 fluid drachms.
- 1 Pint, O.j.—20 fluid ounces.
- 1 Gallon, C.j.= 8 pints.

It is often useful to recollect the weight of different measures. Of water, one minim (\mathfrak{m} j.) weighs nine-tenths of a grain; a fluid ounce at 62° Fahr., weighs exactly 437·5 grains, or an ounce avoirdupois; hence a pint is equal to a pound and a quarter, and a gallon to ten pounds imperial weight.

MEGRIMS, VERTIGO, OR GIDDINESS.

Symptoms.—The attacks come on suddenly whilst the animal is at work, such as going up hill with a heavy load. The animal rears up, reels backwards or from side to side, and falls unconscious to the ground. Every man should cease to use a horse with these symptoms if he values his own safety or the lives of his family.

Treatment.—The collar should at once be pushed forward or removed altogether, and get the animal home as quickly as possible. A few mouthfuls of cold water should be given, and dash the head and face with some. The after-treatment consists in giving mashes and green-meat in

preference to dry food, and the administration of a "Black Physic Ball," occasionally, choosing Saturday or a day preceding rest. Avoid badly fitting collars and discontinue the use of bearing reins. A breast-strap instead of the usual collar will often enable harness work to be performed with comfort and freedom from danger. In confirmed cases of Megrimis, treatment is not advisable as the owner runs a considerable risk, especially if the attack takes place in a crowded thoroughfare.

MUD FEVER.

Cause.—This troublesome disorder arises from the irritating action of wet dirt, and is frequently seen in hunters and carriage horses that have been clipped after a continuance of wet weather. It is rarely seen on horses where the mud is allowed to remain and dry on.

Symptoms.—The skin of the legs becomes irritable and swollen, and very soon cracks appear from which a discharge proceeds, which intensifies the irritation. The patient stamps and rubs one leg against the other, goes stiff, and fever is more or less marked.

Treatment.—Should there be much inflammation present put the animal into a loose box, and clothe well; but do not bandage the legs, merely keeping them as dry as possible. Should the legs be much swollen and painful, foment with hot water for twenty minutes and after this lay a piece of rag, soaked in the "Chemical Extract," over the affected parts, and envelop the whole in a loose linen bandage. By way of diet, give well-boiled barley, bran mashes, etc., and the "Diuretic Powder" as directed. If the animal bites the legs, he must be tied up short or have a cradle put on him. After this smear on daily a little of the "White Chemical Extract."

Prevention.—When a horse comes in wet and muddy, remove the thick of the dirt with a scraper, and put on a set of bandages or envelop the legs in hay-bands, giving a dose or two of "Vetamenta" so as to counteract feverish symptoms. When the mud is dry remove the remainder of it with a dandy brush. The legs of carriage horses and hunters should never be clipped.

NAVICULAR DISEASE OR GROGGINESS.

Cause.—This disease commences with inflammation either in the navicular bone or the tendon sheath in this region, and is seen more especially in the fore-feet of light horses. The predisposing causes are heredity, or sprain of the tendon which passes under the Navicular Bone.

Symptoms.—In the early stages of Navicular Disease the foot is often “pointed,” even before there is much lameness, or when the animal may to all appearances be sound when warmed by work or exercise. In this “pointing” the foot is placed flat on the ground, neither resting on the toe, as in shoulder lameness, nor on the heel, as in chronic laminitis. When the animal is first brought out of the stable, he treads on his toes in order to avoid pain in bringing his heel to the ground; consequently he goes lame downhill and is apt to stumble. After a time the hoof becomes more upright and blocky, and the heels and frog contract, and as the disease advances the sole becomes more concave.

Treatment.—No cure can be anticipated if the case be of long standing, but the following treatment will in all probability arrest the disease if taken in its early stage. Keep both fore-feet as moist as possible by daily dressing them with the “Hornicura” as directed. In some cases fomentations and poulticing with linseed meal or bran, or stopping the feet with tow smeared with the “Hornicura,” have resulted in great benefit. In shoeing, have the toes made short and heels rather low, so as to get a little more frog pressure, and remove any overgrowth of horn. Shoeing with leather often does good by reducing concussion. Cold-water swabs used nightly round the affected feet will do good, and turn the patient into a loose box in preference to standing in a stall, as the latter only aggravates the trouble. An occasional “Diuretic Ball” and a limited amount of corn is indicated. In the more advanced stages of the disease, when it has become incurable, unnerving (Neurotomy) is sometimes resorted to, but this must, of course, be done by a qualified Veterinary Surgeon. With this operation certain trunks of nerves are divided, which means that the foot is rendered devoid of feeling, and for a time, at all events, the horse goes practically sound. If there happens to be a running stream near by, let the animal stand in it for several times daily, provided the part he stands in is soft.

NURSING A SICK HORSE.

When a horse is ill, it is advisable to let one person undertake the duties of nursing, for the less a patient is disturbed the better, and the more likely is he to sleep—a most important matter. In the earlier stages of febrile disease the first symptom noted, as a rule, is shivering, and during this stage a draught would be very prejudicial—in fact, it may have caused the attack. If it appears refreshed by more air, it may safely have it; but if the coat begins “to stare” we may be sure the draught is doing harm. The temperature of the surface of the body and legs must be maintained by means of clothing and bandages, but not by closing the windows and ventilators. When clothing is used it should be loose, as more warmth is obtained from loose than tight clothing. Let this be frequently taken off and shaken or brushed; for the animal, especially during recovery, will be much refreshed by the admission of fresh air to the skin. Again, friction may often be beneficially applied, for restoring warmth, by well hand-rubbing the parts, especially the legs. The mouth, nostrils, and eyes should be sponged once or twice daily, and oftener if there is any discharge, and all buckets or other utensils employed for infectious cases should be thoroughly cleansed and disinfected before being used for healthy animals. It is most desirable that the attendant should be able to use and read a thermometer, as the information obtained by this means is invaluable, especially when treating febrile diseases in which professional aid may be needed.

OPHTHALMIA, OR INFLAMMATION OF THE EYE.

Cause.—This may be caused by the flick of a whip, from the presence of foreign bodies in the eye, such as an oat-husk, hair, sand, etc. Ill-ventilated stables, a cold, and heredity, are also causes.

Symptoms.—The eyelids are closed and swollen, and tears flow copiously. Light causes pain to the eye. The cornea, or membrane which covers the external coat of the eye, becomes red or inflamed, and sooner or later a cloudiness appears, especially at the seat of injury. If Ophthalmia is not properly treated it often terminates in cataract.

The drawing below represents the natural presentation of the foal, in which the nose is observed to be placed between the knees and the forelegs in a line with the passage, or protruding through the vulva.

Treatment.—Always give the mare a mild dose of physic such as a dose of “Red Drench,” three or four days before parturition, and place her in a clean, well-ventilated loose-box with a good supply of straw. With some mares great excitement is manifested prior to parturition, but in such cases the “Gaseodyne,” given as directed, will soothe and strengthen the nervous system and relieve pain if present.

Mares usually foal easily and quickly without much assistance; for in ordinary circumstances the whole affair is accomplished in about five or ten minutes. It often happens that a foal has been sacrificed from want of discretion and over-eagerness to assist the mare.

After foaling, the diet should be light and laxative, and the drinking water made lukewarm, into which mix a little oatmeal. The mare may now be turned out to grass if the weather be favourable, but if otherwise, keep her in, and feed on boiled carrots or turnips, together with some oats and warm bran mashes. This forms a reliable diet. When there is an abnormal discharge from the vagina, following parturition, syringe out the uterus daily with warm water and the “Globe” Disinfectant (1 in 40).

Note.—Brood mares should be given an occasional dose of the “Kossolian Blood Salt” in their food, say twice or three times a week, for about a month before foaling. This will keep them in splendid health and condition during the critical period of gestation, and will not only ensure the mother’s milk being pure and wholesome, but will tend to produce strong healthy foals. In all cases of difficult foaling we advise our patrons to call in a qualified “Vet” at once.



Fig. 26.—The natural presentation.

POLL-EVIL AND QUITTOR.

Both Poll-Evil and Quittor are examples of wounds belonging to a class technically known as fistulous or sinus, and are very difficult to permanently cure. Poll-Evil has its origin from violence, as from heavy whip shafts, or bruising from going under low door-ways, etc. Quittor is a very painful and troublesome disease and often proves incurable unless boldly treated at the outset. It is generally caused by some injury to the sensitive structures of the foot, such as treading on the coronet, or from corns, pricks, etc. An abscess forms within the hard, unresisting hoof, and the only way of escape for the pus is *upwards*, when it is found to "point" somewhere about the coronet. A number of practitioners insert a powerful corrosive, such as a piece of perchloride of mercury rolled up in a bit of tissue paper, which is pushed down the sinus or pipe; but this causes a great deal of pain and is not always successful. This class of wound is best treated by a qualified Veterinary Surgeon; for to do any good, a careful examination and exploration of the sinuses with the knife or probe-pointed bistoury is necessary.

PRICKS IN SHOEING AND GATHERED NAILS.

Pricks and other injuries to the sensitive foot structures are always dangerous, and attended with serious lameness unless treated at once, since matter accumulates and causes pressure, or burrows, and gives rise to that very troublesome complaint Quittor, and sometimes Lockjaw.

Treatment.—Remove the shoe, and try to locate the injured spot by either tapping it with a hammer or carefully applying pressure with pincers, for when found the patient will flinch. Having discovered the spot, pare the sole down to the quick, and put the foot into an antiseptic poultice of bran or linseed, made with cold water, to which add half a tea-spoonful of the "Globe" Disinfectant, especially if it be festering. After this fill up the wound with a little tow smeared with the "Hornicura." Keep the wound wet for a few days. Continue this daily until the lameness has disappeared, and then shoe so as to give cover without pressure to the affected part. In severe cases of foot lameness from pricks, a "Black

Physic Ball" should always be given so as to subdue the inflammation and cool the system.

QUIDDING.

Cause.—By this term we mean that when a horse takes food into his mouth, he may turn it over once or twice in a tired sort of manner, after which he drops it on the ground. This trouble is invariably due to defective teeth, but may arise from Sore Throat.

Symptoms.—The horse "quids" its food—fails to do well, and has offensive breath.

Treatment.—Carefully examine the teeth and remove all rough or projecting edges with tooth-rasp. A cooling diet is indicated, and a mild "Black Physic Ball" as directed.

PULSE, RESPIRATION, AND TEMPERATURE.

The Pulse.—Every stockowner should be able to take the pulse of the horse, as it gives a fair idea of the condition of the animal under examination. A rapid, hard, and full pulse points to high fever and inflammation; on the other hand, a rapid, small, and weak pulse also points to fever associated with a weak and debilitated subject. The quality of the pulse is of more importance than mere number or frequency.

Allowance should be made for excitement or fright, and an animal not accustomed to strangers, should be allowed a couple of minutes before taking his pulse by a person who has just entered the stall or byre. The natural pulse is usually quicker in young than in older animals.

The best place to take the pulse of the horse is on the inside of the lower jaw. This is easily felt by placing the pad of the middle finger gently on the horse's cheek, a little in front of the posterior end of the lower jaw, about four inches below the ear.



Fig. 27. How to feel the Pulse.

The Respirations are taken by the application of the ear alone or with a stethoscope, to the surface over some part of the respiratory organs (nose, throat, windpipe, chest). Experience only will teach the different sounds that signify health or disease.

In the horse, respiration is more regular than in other animals. An increase in the rate of breathing, when the animal is at rest, generally denotes some derangement.

Temperature.—The introduction of the clinical thermometer now affords the most valuable diagnostic aid to the horsekeeper, and places him at great advantage over the old

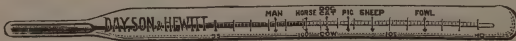


Fig. 28. Clinical Thermometer.

farriers of the past. They can be had at a very cheap rate, and we thoroughly advise their use.

The temperature of a horse is best taken at the anus of the male, and vagina of the female. An elevation of four or five degrees may be considered serious unless it runs down again quickly; while no more than two-and-a-half or three degrees, persistently maintained, will probably indicate illness of a grave character.

The table below indicates the *normal* condition of the Pulse,* Respirations, Temperature, etc.

	Pulse Beats per minute.	Respirations per minute.	Tempera- ture, Degrees Fahr.	Average duration of Pregnancy.
Horse	34-40	8-12	101	11 months

RETENTION OF URINE.

Cause.—If the presence of a stone in the bladder or urethral passage is not suspected, the following rank as the sources of evil: spasm of the neck of the bladder; want of cleanliness by the accumulation of hardened soapy matter in the sheath; neglect in keeping the animal too long from staling.

* The frequency of the pulse and respirations, even in repose, greatly depends upon the temperature of the air, stable, or shed, and whether before or after feeding.

Symptoms.—Frequent and ineffectual attempts to urinate, attended with violent straining and colicky pains. The patient invariably perspires profusely.

Treatment.—If the operator understands how to pass the catheter, this should be done without delay. If, however, this cannot be performed, the loins should be fomented with hot water, and an enema of soap and tepid water forced up the rectum. When the animal has staled, give linseed mash, and linseed tea, gruel, etc., and a few doses of the "Gaseodyne," so as to relieve pain and soothe the nervous system. In a few days' time a "Diuretic Ball" may be administered.

Note.—If the animal is noticed to urinate fully and freely, and then all at once the flow ceases or he only passes a few drops, this points to calculi being present, and a qualified Veterinary Surgeon should be called in at once. Should inflammation be present either in the kidneys or bladder, omit the "Diuretic Ball," and merely give plenty of linseed tea, mash, etc., and small doses of the "Alcoholic Ether." Place hot rugs over the loins afterwards.

RHEUMATISM OR FELON.

Cause.—This is a constitutional inflammatory disease, attacking animals about the ligaments, tendons, and joints, and is usually caused by exposure to cold and damp. Rheumatism is usually associated with other debilitating diseases, such as influenza, strangles, heart affections, etc.

Symptoms.—This disorder gives rise to great pain, swelling, and lameness, and is peculiar for the tendency it has of flying from one part of the body to the other. The affected parts become inflamed and sore to the touch, and feverish symptoms are usually present.

Treatment.—Place the animal in a warm, dry stall or loose-box free from draught, and give the "Felon Drench"* as directed, to which a dose of the "Gaseodyne" may be added, if there is much pain. The affected part should be bathed with warm water every six or eight hours, and after

* A customer writes :—" I cured a very bad case of Rheumatism in a horse with your ' Felon Drench,' followed by repeated doses of ' Kossolian Blood Salt.' "

carefully drying apply a little of the "Brown Chemical Extract." Apply warm woollen rugs and bandages to the parts, and give a dose of the "Alcoholic Ether" so as to encourage perspiration. The diet must be light and laxative, such as gruel, bran and linseed mashes, hay tea, etc., and great benefit will arise from giving a little juice from a fresh lemon in the drinking water. See that the bedding is quite dry.

RIGORS OR SHIVERING FITS.

Causes.—The above conditions are invariably the precursor of a cold, congestion of the lungs, influenza, or some chest affection, and so preventive measures should be at once resorted to. It is especially likely to result after extreme exertion, such as after a hard day's hunting or work, particularly when the animal is not in proper condition. There are cases of Shivering which are due to a certain derangement of the nervous system; but the treatment for this is seldom of any benefit.

Treatment.—Give a full dose of the "Gaseous Fluid" at once, in some warm old ale or stout, and last thing at night give a dose of the "Alcoholic Ether" and feed on a light diet for a few days. Well rug the animal up at night, and avoid all draught. The after-treatment consists in getting the animal into hard condition by a course of the "Kossolian Blood Salt," and the best food given little and often. The great aim should be to avoid extremes of heat or cold.

RINGBONE.

A ringbone is a bony deposit either on the upper or lower pastern bone, called high or low ringbone, and is more frequently found in the hind than the fore fetlocks, and with light-legged horses having straight pasterns.

Cause and Symptoms.—This is really a deposit of bone on the pastern bone and may be due to any injury or hereditary tendencies. The most pronounced symptoms are pain and enlargement of the parts and pointing of the foot, accompanied with stiffness and lameness.

Treatment.—This is practically the same as for Splints, but with reference to the shoeing, it is advisable to notice how the patient puts his foot to the ground. For instance, in ringbone of the foreleg, the heel is put down first, and a thin-heeled bar shoe will often keep chronic cases working moderately sound, since it enables the animal to

throw its weight upon the heels with the least possible effort. If, on the other hand, the horse walks on his toe, he should be shod with a high-heeled shoe; and give an occasional "Diuretic Ball." Apply the "Red Blister Ointment" right round the pastern, taking proper precaution against any of it getting into the heels. When Ringbones are forming, nothing can equal the "Kurbicura" if applied as directed.

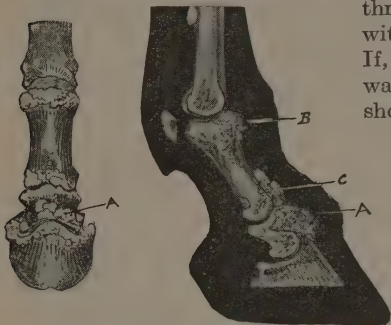


Fig. 29. Three kinds of Ringbone. (A) "Low" or "True" Ringbone, (C) "High" Ringbone, (B) "False" Ringbone.

RINGWORM.

Cause.—This is caused by the presence of a vegetable parasite which attacks the hairs and superficial covering of the skin, and is said to be more prevalent in Ireland than in Great Britain.

Symptoms.—When the bare patches are examined, they are noticed to be dry, scaly, or scurfy, while the broken hairs give them a stubby aspect. There is considerable itching, and the disease is supposed to spread in gradually enlarging circles. It is very contagious, even to man.



Fig. 30.
A neglected case of Ringworm.

Treatment.—The affected part should be thoroughly washed with soap and warm water, and having thoroughly dried with a cloth, apply the “Ringworm Ointment” as directed. If the animal is in a high condition, give an occasional “Black Physic Ball” and a change of diet, consisting at first of mashes, boiled linseed, carrots, etc.; if in poor condition, feed more generously, and give the “Kossolian Blood Salt,” so as to improve the appetite and enrich the blood. It is always advisable to continue using the “Ointment” even after a cure has to all appearances been obtained, so as to make sure that all eggs of the parasite are killed. Wash and thoroughly disinfect all stable appliances and other utensils with the “Globe” Disinfectant.

SAND CRACK.

Cause.—This may happen in an instant from an injury or false step, causing a fissure or perpendicular crack in the hoof, beginning at the coronet and extending downwards, into which sand or dirt frequently enters. It may happen to either fore or hind feet, and usually arises from dryness or brittleness of the crust, induced from over-rasping the feet, thereby removing Nature’s varnish.

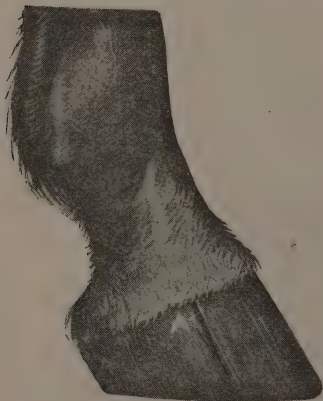


Fig. 31.

Sand Crack.

A. Location of the Injury.

Treatment.—Commence by removing all dirt, etc., and wash with soap and warm water, to which add a little of the “Globe” Disinfectant. This done, pare out the crack so as to convert it into a groove, and then draw a transverse line with a red-hot firing iron above and below the crack. Stop the foot with cow dung and moist clay. After this freely apply the “Hornicura” to the entire hoof (including the coronet), for this will counteract all brittleness and

keep it moist and elastic. The shoe should be eased below the crack, and cold water cloths or swabs put round the hoof every

night. The after-treatment consists in turning the animal out with a bar shoe on, and applying mild dressings of the "Blisterine" to the coronet, in order to stimulate the new growth of horn. This may be repeated in about three weeks' time. In from ten days' to three weeks' time the animal may be put to light work. For bad cases, in which the coronet has been divided, a qualified "Vet" must be called in. In shoeing, avoid direct pressure, such as clips or nails on the part, or fitting a shoe which will tend to force the crack open.

SCOUR OR DIARRHŒA.

Causes.—This disorder may arise from eating over-succulent food; sudden change of diet; worms; imperfect mastication from defective teeth; or from taking a draught of cold water whilst overheated. It is said to be most frequent in thin and spare animals, whose loins are narrow, and the interval is great between the last rib and the hip bone.

Symptoms.—Frequent and copious evacuations of dung in a watery condition, usually of a brownish colour, and of a most objectionable odour. The animal has a capricious appetite, loses flesh, and shows signs of anæmia.

Treatment.—Place the animal in a well-ventilated loose-box, and put a rug on. Withhold all coarse and over-succulent food, giving instead, small quantities of sound old hay and dry bran; also see that the oats are crushed. Reduce the quantity of water, and if the weather be cold, give the water with the chill off; in some cases it is often beneficial to mix a packet of Malted Oatmeal Gruel with it. Give the "Gaseous Fluid" twice or even three times daily, according to the severity of the disorder. If the diarrhœa is consequent upon some irritation in the bowels, it is best to give a laxative first, such as a pint of castor oil, with a little "Gaseodyne" in it, and then follow on with the "Gaseous Fluid."

With convalescence, gradually return to the ordinary diet, and let it be of the best quality; also give the "Red Condition Powder," as directed, to restore strength and tone to the stomach and intestines. (*See also* page 86, under "Washy or Scouring Horses.")

SCOUR OR DIARRHŒA IN FOALS.

Cause.—This may arise either from indigestion or from exposure to wet and cold. The Diarrhœa or Dysentery of newly-born animals is infectious.

Treatment.—This depends upon the cause, for should the mare's milk be at fault, it is advisable to at once alter her usual mode of dieting, and having taken the foal away, give the mother a full dose of the "Red Drench" so as to cleanse the system. To the foal, commence by giving a dose of the "Balsamic Castor Oil," so as to expel all irritating material from the bowels; this done, give the "Curdolix" two or even three times daily. This will soothe the system, and rapidly counteract acidity of the stomach. Warm flannels wrung out of hot water, and frequently changed, are very useful when applied to the bowels; and, in order to keep the steam in, cover them with a sack or rug. Strict attention should be paid to cleanliness and other sanitary matters, and for this purpose nothing can be better than to sprinkle a little of the "Globe" Disinfectant upon all brick or stone floors and drains as directed. If the foal is very weak, administer a dose of the "Gaseous Fluid" beaten up with four eggs, and give in gruel every four hours.

Note well.—Simple cases of Scour are best treated with the "Gaseous Fluid," but, of course, should "Red Worms" be the cause of the mischief (which is so often the case with colts), the "Red Worm Mixture" must be administered as directed.

SCURFINESS OF SKIN AND LEGS.

Causes.—This may arise from indigestion, neglect in grooming, debilitating disorders, unsuitable diet, etc., or it may occur as a distinct skin disease.

Symptoms.—Coat appears rough and scurfy, and is invariably itchy.

Treatment.—Commence by giving either a "Black Physic Ball" or an occasional "Diuretic Ball," as the system is usually a bit clogged up in these cases; also feed on a light and rather laxative diet for a few days, such as grass, carrots, turnips, bran and linseed mash, etc. The affected parts must be thoroughly washed with soft soap and water, but take care to thoroughly dry with a rough

towel afterwards. In bad cases, soaking the scurfy parts with the "White Chemical Extract" (leaving it on for half an hour) and then washing off with warm soap and water, is highly beneficial. Repeat this again on the fourth day if necessary. In all these cases the blood must be acted upon by the "Kossolian Blood Salt," as it is invariably in an impoverished condition. A dose should be given daily for a few days; then every alternate day till an improvement is noticed. Feed well at this stage, and pay particular attention to good grooming, and proper sanitation. If the legs are affected, massage them once or twice daily, and bandage same when in the stall.

SEEDY TOE.

Causes.—Uneven bearing of the shoe, direct violence to the coronary band, or too tight hammering of clips.

Symptoms.—If the foot is tapped lightly with a hammer there is a distinct hollow sound, which is never present in a sound foot, and on the shoe being removed the cavity is easily discovered, containing soft cheesy material. It is most common in the fore feet.

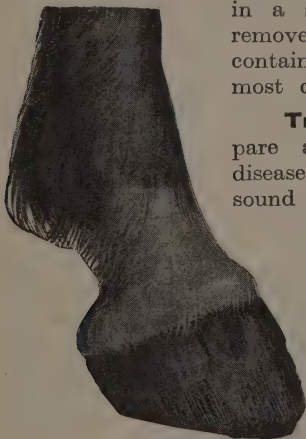


Fig. 32.
A case of Seedy Toe.

Treatment.—Remove the shoe and pare away every particle of detached or diseased horn with a searcher, until the sound horn is reached, and then fill in the cavity with the "Hornicura" placed on some tow. In bad cases, every third day stimulate the coronet by rubbing in a *little* of the "Blisterine," and apply the "Hornicura" to the entire hoof wall. The wall bounding the cavity should be relieved of all pressure by putting a bar-shoe with side clips on; also keep the feet dry. Rest till cured, and

every time the shoe is taken off, scrape the diseased horn out, and fill up the cavity again with the "Hornicura." If the animal be in a delicate condition, which is invariably the case, give a few doses of the "Gaseous Fluid" in a pint of old ale or stout, once daily, for a few days.

SHELLY OR BRITTLE FEET.

Causes.—This is frequently caused by indigestion, but is chiefly due to excessive rasping of the outer hoof wall, in the effort to make neat work in shoeing. This favours evaporation, and the toughness so desirable is replaced by brittleness.

Treatment.—Use broad flat shoes, in order to reduce the jar on the crust by throwing pressure on the sole. Calkins should be discarded, and clips should be used in place of nails. Stimulate the coronet by rubbing in a little of the “Blisterine,” and apply the “Hornicura” to the entire surface of the hoof as directed. When the horse is again shod, forbid the frog being touched, or any excessive rasping, especially below the clenches. Keep the animal in the dampest meadow procurable during treatment, so as to further encourage the growth of new horn. The “Hornicura” does not contain any fatty acids which are so injurious to horn, but helps to prevent the escape of moisture, which is so essential for preserving its strength and toughness.

Prevention.—Give a “Black Physic Ball” every Spring and Autumn with an occasional dose of the “Kossolian Blood Salt” sprinkled amongst the food. Employ the “Hornicura” as directed.

SIDE-BONE.

Causes.—These may arise from a tread or a bruise, or the concussion of paved roads. The tendency to ossification of the lateral cartilages in heavy draught horses is largely the result of hereditary predisposition or shoeing with high calkins, which removes the frog from its ground pressure, thus throwing the weight on these cartilages. Side-bones are generally met with in the fore feet, but in any case Side-bones are considered an unsoundness.

Symptoms.—A hard bony swelling will be found at the back of the coronet and heels, accompanied with heat and tenderness in the first instance. The patient goes more lame on hard than soft ground, but the nag can be seldom made to trot on the former.

Treatment.—Remove the shoe and apply cold water poultices until the inflammation and pain have abated. After this apply wet swabs while in the stable, and the “Brown Chemical Extract,” but on no account cut out the frogs or bars, for this prevents them taking a fair bearing. Side-bones usually affect heavy horses with thick skins, and for such cases nothing can equal a good smart application of the “Red Blister Ointment”; but should they appear on the lighter breed of horses, the best plan is

to apply repeated dressings of the “Kurbicura” as directed, which acts by absorption. A bar shoe is recommended, and removes pressure from the quarters and exerts pressure on the frog; but in some cases pneumatic pads have proved useful. Do away with high calkins.

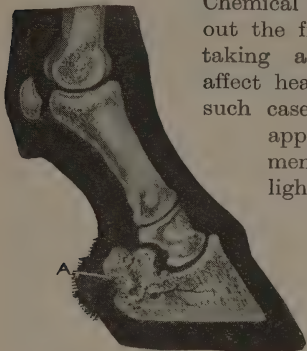


Fig. 33.
A. Ossification of the Lateral Cartilage, commonly called Side-bone.

SKIN DISEASES.

There are, of course, various skin diseases of the Horse, some of which are dealt with under special headings in



Fig. 34. A bad case of Skin Disease.

this book, but now and then a serious form of it presents itself, which requires special treatment.

Symptoms.—The body is covered more or less with swellings or blotches which are inflamed or sore, and which sometimes extend to the lips and face. The hair becomes erect, about the affected parts, and the sores themselves vary in size from that of a shilling to a five-shilling piece. Crusts soon form on the sores, which can easily be removed by the hand, and under these a pus-like fluid is observed. Fever is generally present.

Treatment.—Give a light diet such as hay, crushed oats and grass, and a mild “Black Physic Ball” and then follow on with a course of the “Kossolian Blood Salt,” this being a specific for all blood disorders. Rub the “White Chemical Extract” well into the crusts (dead material) once daily, and when these have nearly disappeared, turn the animal out to grass.

SORE SHOULDERS AND SADDLE GALLS.

Cause.—Poorness of blood, or too much friction from badly fitting collars or saddles; these produce respectively Sore Shoulders and Saddle Galls. Certain horses are naturally very tender skinned, and are only kept at work with great difficulty. Poor condition favours these skin troubles.

Treatment.—Commence by giving a “Black Physic Ball,” and well bathe the affected parts with cold water, night and morning, and when dry, gently apply the “Gall Cure” as directed. In troublesome cases cover the sores with Fuller’s Earth by way of a change to using the “Gall Cure.” See that the collar or saddle fits properly, and the linings are pliable, not hard and corroded with perspiration as is often the case. Saddle Galls are frequently caused by faulty construction of saddle; it must neither be too wide nor too narrow, nor must there be too much direct pressure on the spine. A rest is advisable, but if this is impossible, great care must be taken to prevent further injury to the wounded surface by padding the harness so that chafing cannot take place. A breast-strap must be used for bad cases of Collar Galls, should the animal be required for work, and in chronic cases a steel collar has been found beneficial.

Prevention.—All Harness Galls can be prevented by *gradually* getting horses into working condition by giving a few doses of the “Kossolian Blood Salt” in damped food; for by this simple treatment the blood is purified and the muscles and skin are toned up previous to being put to any extra work. This means they are less liable to soreness. Tender-skinned horses should have repeated dressings of the “Sore Shoulder Lotion,” which will soon harden the affected parts.

N.B.—For ordinary cases of Humour where the skin comes up in pimples, etc., just where the harness goes, give an occasional “Diuretic Ball” as directed, and a few doses of the “Kossolian Blood Salt.” Having fomented the affected parts with cold water twice daily, finish off by sponging with the “Sore Shoulder Lotion,” and feed on a light laxative diet for a short time. (*See also* Fistulous Withers and Sitfasts, page 32.)

SORE THROAT, OR LARYNGITIS.

This is a common complaint, usually associated with such diseases as Influenza, Strangles, etc. The complaint is nearly always confined to the region of the larynx.

Symptoms.—There is generally a cough, and the patient “quids” his food and pokes his nose out. Slobbering at the mouth is also a symptom, accompanied with distress in breathing due to accumulation of phlegm. The prolonged indrawing of the breath, accompanied with a harsh and abnormal noise, is diagnostic of the affection.

Treatment.—Feed on sloppy food, and give gruel twice daily, into which a little of the “Easakof” has been added; but care must be taken in drenching the patient during the acute stage. If more convenient, the “Easakof” can be merely plastered on the tongue as directed. Let the animal’s nostrils be repeatedly steamed over a bucket containing boiling water, to which add a little turpentine or oil of eucalyptus.

Either rub the “Chemical Extract” into the throat, or apply a mild blister. Avoid giving hay or dry food until the acute symptoms have passed. If these cases are not properly treated they invariably develop into Thick Wind or Roaring.

SPAVIN.

This is an ossification of the small bones of the hock, preceded by an inflammation of their articular surfaces, and constitutes an unsoundness.

Cause.—Hard work when young, although in some cases it seems to be hereditary. Cow-hocked horses are always prone to put out a spavin; but it may occur in all breeds and at any age.

Symptoms.—A small deposit of bone is noticed upon the lower and inner sides of the hock joint, which, when forming, produces great lameness. This lameness, however, gradually passes off after going a short distance, but soon returns again with rest. The limb is never perfectly flexed, and the toe of the shoe is noticed to be well worn, from being dragged along the ground.

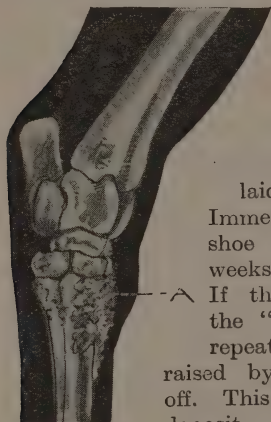


Fig. 35. Spavin.
A. Bony deposit
(Exostosis) which
constitutes
Bone-spavin.

Treatment.—This is similar to that laid down for Splints and Ringbone. Immediately lameness is noticed, remove the shoe and allow a run at grass for several weeks, applying the “Kurbicura” as directed. If the disease be of some standing, apply the “Red Blister Ointment” several times, repeating each dressing when the scurf raised by the previous application has peeled off. This will promote absorption of the bony deposit. An occasional “Black Physic Ball” will be found beneficial during treatment; withhold all corn. A high-heeled shoe is advisable. Firing has been found of greater service with Spavin than in any other bony enlargement.

SPLINTS.

Causes.—These usually arise from putting young horses to heavy work, or to work on hard roads before their bones are set, especially in subjects where there exists a predisposition to the disease from heredity.

Symptoms.—A Splint is a swelling noticed upon the inner and lower part of the knee of the fore leg, or upon the shin bone of hind leg, this being due to a bony deposit. This swelling when developing causes considerable pain on pressure, but as a rule seldom impairs the usefulness of the heavy breeds of horses, such as Clydesdales, etc. There is usually present the peculiar nodding and dropping of the head when the horse is trotting.

Treatment.—If active measures are adopted on the first appearance of the disease, by subduing the inflammation, and so preventing the further formation of bony deposit, a cure may be expected. In order to bring about this result, a rest must be allowed for a few weeks, an occasional "Black Physic Ball" given, and the parts fomented with cold water twice daily. Turning on the cold water hose does well for this purpose. Having subdued the inflammation, rub in the "Kurbicura" as directed. For older Splints the "Red Blister Ointment" should be applied several times, repeating each dressing as soon as the scurf raised by the previous application has peeled off, which usually takes place in about a fortnight or three weeks' time. Turn the animal out to grass if practicable. Later on cold-water bandages will be found useful, especially if sprinkled with a little of the "Chemical Extract."

STAMPING THE FEET OR BITING THE LEGS.

Cause.—This troublesome affection frequently affects Shire Horses, and is due to a parasite of the Mange class called "*Symbiotes Equi*."

Symptoms.—These parasites generally attack the heels and pasterns of the hind legs, causing the animal to stamp and bite, which in many instances produces serious wounds on the coronet. The parasites are invisible without the aid of a microscope or pocket lens, and if proper treatment is not resorted to the "feather" is damaged, and the patient gets very little sleep. This disease is often mistaken for Grease; but if there is no smell of this on the fingers after rubbing the legs, leg mites must be suspected. As a rule the horse rubs his foot against the opposite leg and sometimes wounds are inflicted.

Treatment.—Plaster the whole of the affected legs with soft soap nearly half an inch thick, and allow this to remain on for at least half an hour, so as to raise the skin or cuticle, under which the insects live and deposit their eggs. After this wash the soft soap off, and then apply the “Mange Wash,” repeating the process in five or six days, so as to ensure killing all the newly-hatched “nits.” Give dry whole oats and hay, also straw and chaff; but for a time withhold roots, for as a rule the digestion is impaired, and for such, a course of the “Kossolian Blood Salt” is indicated.

STRAINS OR SPRAINS OF BACK TENDONS, BREAK-DOWN, Etc.

Symptoms.—This condition indicates rupture or breaking down of the fibres, either of the tendon itself or tendon sheath, and causes great pain and thickening of the part. As a rule the patient is unable to bring his foot flat on the ground. A Break-down generally denotes laceration of the suspensory ligament or flexor tendons, etc., which means that the fetlock comes to the ground. It is usually associated with racehorses, hunters, and steeplechasers.

Treatment.—In recent injuries the continuous use of hot-water fomentations and then poultices of linseed meal, are very necessary; but the water for the former should be no warmer than the hand can comfortably bear. When the inflammation has subsided and the patient can put his foot to the ground, rub in a little of the “Chemical Extract,” or apply a piece of rag soaked in the “Extract,” and then wrap the injured part in a cold-water bandage. It is advisable to omit giving corn, and to prepare the patient with cold bran mashes, previous to administering a “Black Physic Ball.” In severe strains of ligaments, an entire rest is needed for a month or more, and a smart application of the “Brown Blister Ointment.” Put a high-heeled shoe on, which will take the weight off the injured ligaments, and on the completion of the cure be careful to put the horse very gradually to work. Massage or hand-rubbing will be found most beneficial, but care must be taken that the skin is dry at the time, and the affected part free from pain. With Break-down, a Veterinary Surgeon must be called in, for splints will be necessary, and the patient put in slings.

STRANGLES.

Cause.—This has not been definitely determined yet, but by some it is said to be due to a specific germ. In any case it is a suppurative febrile complaint, very contagious, and usually affects young animals up to the age of two to three years. It is frequently seen in the spring of the year, or when young horses are just brought in from grass during their dentition. The period of incubation varies from 4 to 8 days.

Symptoms.—Those of an ordinary cold with cough and profuse discharge of yellow mucus from the nostrils, together with the formation of an abscess which appears in the hollow between the branches of the lower jaw. This swelling gradually increases in size, and feels like one solid mass, becoming hot, tense and painful, which causes difficulty in breathing. The animal is dull, refuses food, and the neck becomes stiff.

In what is termed "Bastard Strangles" abscesses appear at other parts of the body, such as under the jaw, side of the face, etc., and in such cases a qualified "Vet" had better be called in.

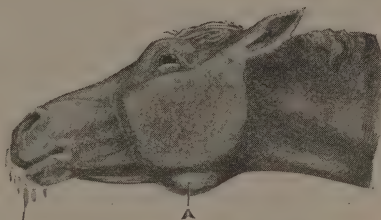


Fig. 36. A case of Strangles.
Shewing the Swelling under Jaw (A).

Treatment.—Isolate the patient at once, and, if possible, do not let the attendant come in contact with healthy animals. Well clothe and place in a well-ventilated loose box, giving plenty of light nourishing food, such as damp bran, linseed or oatmeal gruel, fresh grass, carrots or potatoes, and a few crushed oats. Keep the body warm, and bandage the legs, and on no account resort to bleeding. If the bowels are constipated, give a mild "Black Physic Ball," or a dose of the "Red Drench" in a mash, and repeat every third day. The "Vetalenta" is a splendid medicine for this complaint, as it safely lowers temperature, thus warding off complications. It should be given every four hours during the febrile stage, either in the drinking water or as a drench.

Bathe the swelling under the jaw with warm water, and if assistance is required to bring it to a head, poultice with boiled carrots or mustard, or rub the part once or twice daily with the "Chemical Extract." In indolent cases a little of the "Brown Blister Ointment" should be used instead, to hasten its progress and prevent the inflammation spreading. When the abscess is ripe or pits on pressure, it should be opened at its lowest part so as to allow free drainage of its contents, and the matter pressed out. Wash the abscess cavity out afterwards with warm water, and anoint its edges with the "White Chemical Extract," which will soften the part and promote healing; but keep the mouth of the wound open for three or four days by inserting a piece of tow, otherwise it may heal at the surface and not from within outwards. Cleanse daily with the "Globe" Disinfectant and warm water, and should the breathing become difficult, the animal's nostrils must be steamed with some hay put into a bucket and boiling water poured over it. In bad cases it is most important to keep the part affected at an equable temperature, so make a nightcap out of some old blanketing and tie this close up to the ear on the near side, thus enveloping the throat. During the formation of the abscess (provided there is not much fever present) the animal's strength must be kept up by half-bottle doses of the "Gaseous Fluid" in a pint of old ale or stout, given twice or three times daily, and feed liberally on good nourishing food, such as new milk, eggs, gruel, etc., the disease being very debilitating. Later on follow up with a course of the "Kossolian" and add a little boiled linseed to the food.

Prevention.—Daily disinfection of mangers, walls, fittings and flooring of stalls, with the "Globe" Disinfectant, and keeping the blood pure by periodical doses of the "Kossolian Blood Salt," say twice a week, during an outbreak in the neighbourhood.

STRINGHALT.

This is an unsightly and rather uncommon complaint, and denotes unsoundness. It is liable to produce sand cracks, and may be produced by rheumatism or heredity; unfortunately these cases tend to get worse in spite of good treatment.

Symptoms.—A sudden snatching up of the hind legs, which makes the horse's action peculiar.

Treatment.—This is seldom of any permanent use; but the objectionable symptoms can sometimes be mitigated by a course of "Kossolian" and good food, if the case be taken at the onset.

SURFEIT OR NETTLE-RASH.

Cause.—Usually from overheating of the blood or body, due in all probability to eating some indigestible or strange food, such as too many oats that have been got in wet or kiln-dried, or first feed of new grass, etc. Drinking cold water when overheated will also cause this trouble.

Symptoms.—The body is noticed to be suddenly covered with a number of round elastic swellings, varying in size from mere pimples to a shilling, which appear particularly about the neck and quarters. Sometimes the hair falls off in patches.

Treatment.—Commence by giving a 5-drachm "Black Physic Ball" as directed, and repeat this on the sixth day, if necessary. Avoid all heating food, such as corn and beans, giving instead a light and rather laxative diet, such as bran mashes, grass, carrots, etc. Let the drinking water be given with the chill off, and keep the stable well aired, and disinfected with the "Globe" Disinfectant. In a week's time commence with the "Kossolian Blood Salt," giving it two or three times daily in damped food, for several days, then once daily, and so on until a cure is effected. Prick the boils or pimples and then anoint with the "Sulphuretted Ointment" as directed. In certain cases a dose of the "Red Drench," given in a pint of cold gruel, to which a dose of the "Gaseodyne" has been added, quickly brings about a cure if repeated two or three times. The sooner treatment is commenced the better, otherwise the hairs of the swellings are liable to turn white and this is objectionable.

Prevention.—See that the animal has good grooming and plenty of damp wisping, in order that the skin be properly stimulated, especially when the coat is changing. An occasional dose of the "Kossolian Blood Salt" will ward off attacks, especially if the bowels are kept free.

SWEET-ITCH OR IRRITATION OF THE SKIN, MANE, AND TAIL.

Severe itching of the skin, mane, and tail is often met with quite independent of parasitic invasion, and by some authorities it is considered to be a form of Eczema. Itching of the mane and tail causes great disfigurement, and is often difficult to eradicate when the habit of rubbing becomes confirmed and treatment delayed.

Causes.—Many horses suffer from the above every spring and autumn, this in some instances being due to defective grooming, impurities of the blood, or to the presence of worms in the rectum, such as the *Oxyuris curvula* (see page 92).

Treatment.—This depends upon the cause, but in all cases give a “Black Physic Ball” two or three times during the grass season, between April and October; for it is of the utmost importance to thoroughly cleanse the system. Bran or linseed mashes are useful, and should the horse be in the stable, keep him on grass, carrots, or other green food, and in a few days’ time the “Kossolian Blood Salt” must be given as directed; for invariably the blood is impoverished. In order to protect the tail from being rubbed, use a tail cover or guard, which is connected with the surcingle. The “Xemos”^{*} must be applied as described under Parasitic Mange, afterwards washing it off with soft soap, etc., and repeating operation in a fortnight. Do not use a woollen horsecloth or rug, for this only aggravates the irritation; but if the weather be cold, a linen cloth may be placed underneath the horsecloth. This and the skin, can be damped freely and frequently, if the irritation is intense. Work regularly, and in bad cases of itching it is a good plan to “Hog” the mane and clip the hair from the tail all over the dock, in order to dress more easily. Prevent as much as possible the animal biting or rubbing himself; this is best done by either tying the head short or putting on a cradle or muzzle. If the irritation is due to internal parasites, the case must be treated as described under “Internal Worms” (see page 89).

^{*} A customer writes :—“ I find a solution of your ‘Globe’ Disinfectant sponged over the affected parts, and a course of the ‘Kossolian’ quickly makes a cure if the case is taken in its early stages.”

SWOLLEN OR FILLED LEGS.

Cause.—Often due to want of condition, or to giving too much boiled food of a “slushy” nature, such as boiled turnips, or potatoes, and cut corn sheaves, soft unconditioned hay or oats, etc. It is noticed most during the winter months, especially when horses are stall-fed and have thick coats of hair. Debility or weakness of the system often causes the legs to fill at night, and when at work. Coarse-bred horses are very subject to this condition, especially in the hind legs.

Symptoms.—Heat and tenderness may or may not be present; but there is generally more or less fever and lameness, and sometimes the sheath becomes swollen and pendulous.

Treatment.—This depends upon the cause, which must be diligently sought for. Place the animal in a well-ventilated loose-box, give regular exercise, and once daily well rub in the “Chemical Extract” to the affected parts, and whilst at rest in the stall exert gentle pressure by means of flannel bandages. These must not be applied too tightly, and they must only be put on during the night. Give a light diet consisting of bran and linseed mashes, carrots, damp corn, grass instead of hay, and a “Diuretic Ball” twice a week, introducing the “Kossolian Blood Salt” into the food twice daily, in a damped feed of corn and short chaff. This will brace up the muscular system and improve the quality of the blood. A light application of the “Brown Blister Ointment” is sometimes of great benefit, and especially so is a run at grass. Change the diet if this is thought to be at fault, and clip the hair off the legs; also, at this stage feed with well-conditioned corn and hay.

SWOLLEN SHEATH.

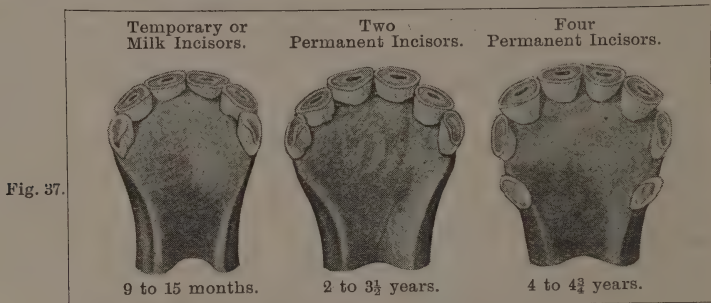
Cause.—This often arises from an accumulation of waxy or sebaceous material in the sheath, which produces a peculiar noise when trotting, due to air being drawn in with the yard or penis. It may also be caused by debility of the system.

Treatment.—Introduce $\frac{1}{2}$ lb. of lard (free from salt) and leave as much as you can inside. Next day take another $\frac{1}{2}$ lb. and work the hand right up—drawing the yard, so as to get the waxy material away. After this wash out with soap and warm water, and lubricate with fresh lard.

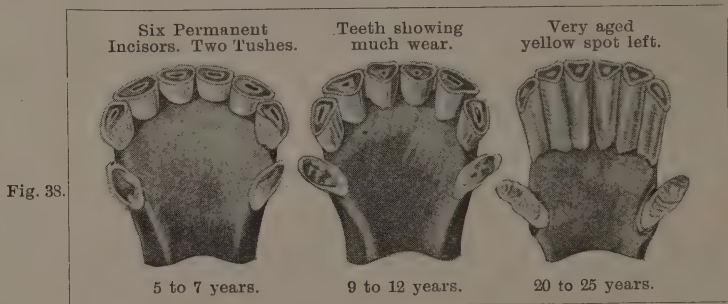
If the swelling is due to debility of the system generally, give the "Gaseous Fluid" in a pint of old ale or stout three or four times a week, with the best quality food, little and often. Give a "Diuretic Ball" occasionally.

TEETH.

The following diagrams should enable the horse-owner to distinguish the principal changes in the mouth by which they are known as Yearlings and 2, 3, 4 or 5-year-olds. At the 6th year



the marks in the two central incisors are fast disappearing, at 7th the next pair undergo the same wear, and at 8th



the original black markings are practically gone, save for irregular-shaped marks which are intended to show a middle-aged horse of 10 or more. In extreme old age the teeth become very long and narrow, while the "tables" are three-

cornered instead of the elongated ovals of youth. The horse has forty teeth when full-mouthed and has two sets viz.: Temporary or Milk Teeth, and Permanent—the former are much smaller and whiter than the latter. The teeth should be examined periodically to see if they have any rough edges, or if Caries has set in. Sometimes it is necessary to cut off part of a tooth when it is found to project above the level of the rest, as this condition prevents proper mastication, with the result that the grain goes through the system whole.

THE BLOOD.

That complex fluid which constantly circulates through the arteries and veins of all the higher animals, is the great medium of exchange, by which materials are supplied for

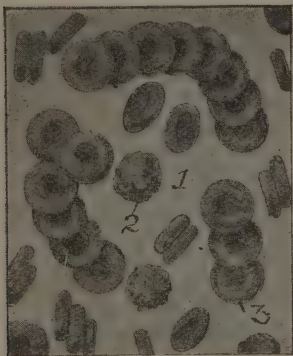


Fig. 39.

HEALTHY BLOOD.

The constituents are:—

1. Clear Serum.
2. White Corpuscles or Leucocytes.
3. Red Corpuscles.

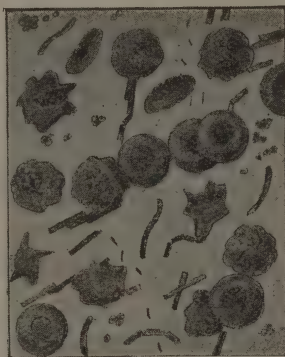


Fig. 40.

UNHEALTHY BLOOD.

In this the Serum is thin and poor. The White Corpuscles altered in shape. The Red Corpuscles flattened and irregular, with broken and crenated edges.

the nourishment of the tissues of the body, and their waste products removed. Physiology and Pathology have advanced from crude theory and superstitious empiricism to exact sciences; schools and systems of medicine have had their rise and fall; Bacteriology, thanks largely to the microscope, has made rapid strides, and yet, during all time since the aged Israelitish law-giver pronounced his famous dictum that

"the blood is the life," down to these days of Pasteur, Koch, and other scarcely less eminent Pathologists and Bacteriologists, the blood has universally been regarded as "the vital fluid."

In all debilitating and wasting diseases, where the blood has become unhealthy, the "Kossolian Blood Salt" is imperatively called for. The effect is at once recognized, for it prevents the rupture of the blood vessels and tends to build up the weak ones. This medicine also appears to have the peculiar power of stopping decomposition, while enabling the excretory organs to eliminate all unhealthy products.

THOROUGH-PIN.

Cause.—Excessive work or strain.

Symptoms.—This is a bursal distension found on the upper part of the hock, just above the point, and is most commonly found in heavy cart horses with thick straight limbs. The tumour varies in size and seldom causes serious lameness; in many cases it is found associated with Bog Spavin. If the swelling be pressed with the finger on one side of the limb it bulges out on the other, hence its name—

Thorough-Pin. It constitutes an unsoundness, and is very unsightly.

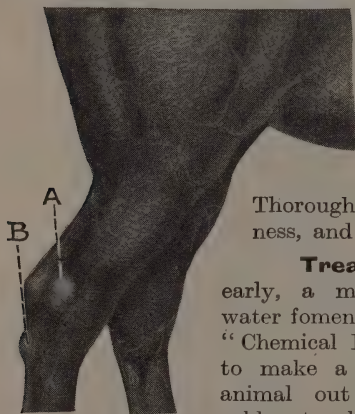


Fig. 41.

- A. Seat of Thorough-Pin.
- B. Seat of Curb.

Treatment.—If the case be taken early, a mild "Black Physic Ball," hot-water fomentations and the application of the "Chemical Extract" is all that is necessary to make a cure. If practicable, turn the animal out to grass, and apply repeated cold-water bandages. With older cases it is best to apply a little of the "Red Blister Ointment" just sufficient to raise a slight scurf, and to repeat this process two or

three times. A high-heeled shoe is indicated. Good results sometimes follow the use of a Thorough-Pin Truss, or the employment of an india-rubber bandage, which causes compression and absorption, especially if the "Chemical Extract" be used occasionally.

THRUSH.

Cause.—This is generally produced by the animal standing in a wet, filthy state, but the predisposing cause is want of pressure to the frog, and consequently deprivation of its function. Injudicious paring of the frog to please the eye, and the use of calkins, prevent the frog coming to the ground and thus exercising its useful purpose of preventing slipping and lessening concussion. It attacks horses of all ages, but the hind feet are more frequently affected than the fore.

Symptoms.—A thin, dirty, and offensive discharge of thin matter from the cleft is in evidence, the surface of which soon becomes ragged. In chronic or neglected cases the horny covering of the frog often rots off, exposing a red and sensitive surface.

Treatment.—Take off the shoes and remove all decayed horn and accumulated matter by the Smith's knife or "Searcher," in order that the remedy to be used may get down to the origin of the disease. In bad cases it is best to apply a poultice for about 24 hours, and give a "Black Physic Ball" as directed, omitting all heating food



Fig. 42. A Searcher.

for a short time. Apply frog pressure by means of pads of tow plastered over with the "Azodyne," especially at the cleft portion. Over this a leather sole and shoe can be tacked on, to keep the above in position. Light work can be resorted to in this way. By way of a change to the "Azodyne" treatment, bathe the parts night and morning with salt and water. Keep the feet as dry as possible by removing all damp and wet straw, and in certain cases great benefit has arisen from applying the "Hornicura" to the entire hoof wall twice a week. Pay particular attention to cleanliness, and allow the shoes to wear down till they are as thin as a sixpence, in order to get the sole surface near the ground. In obstinate cases a course of "Kossolian" for a week or ten days is indicated, as this disease is very debilitating. If maggots are present they should be at once picked out.

N.B.—We strongly advise our customers to treat these cases at once, otherwise they will develop into Canker (see page 10).

WARTS OR ANGLEBERRIES.

These are abnormal growths of the outer layer of the skin, and generally occur on the soft thin parts of the skin, such as the nose, sheath, udder, and thighs, etc.

Treatment.—If these warts have long necks, the best plan is to either twist them off or ligature them with some thread, or they can be cut off with a pair of sharp scissors and then dressed with the “Wart Solvent,” but if they are seen in clusters this preparation must be used several times as directed.

“WASHY” OR SCOURING HORSES.

By the above we mean animals that purge or scour from trifling changes of food or temperature. The slack-loined hunters and racehorses are very subject to it, or those that are not well-ribbed home, as it is termed.

Causes.—Working or exercising an animal too soon after watering or feeding, general debility, or weakness of the intestinal tract. Inferior foods are a common cause, and not infrequently worms.

Treatment.—Give the “Gaseous Fluid” twice or even three times daily in bad cases, for four or five days, then omit giving it for a day or two, and continue with half-bottle doses twice daily until an improvement is noticed. Give the drinking water with the chill off and thickened by means of flour, or, better still, a packet of “Malted Oatmeal Gruel.” Always give chopped hay mixed with the corn; and a small quantity of beans, to which add a handful of bran. The “Cod Liver Oil Powders” have been found of great benefit in these cases, as they soothe the bowels and rapidly nourish the weakened system. If the horse is a greedy feeder, give some hay before each feed. The oats should always be bruised, for in this state they will require less mastication. Avoid giving physic, and examine carefully the fæces for evidence of worms; and if found treat as on page 90. In all these cases warm clothing and quietude are essential, and every attention should be given to proper sanitation, and in this respect use freely the “Globe” Disinfectant as directed. (*See also* page 67.)

WATERING HORSES.

Good water should be clear and of a bluish tinge, with no sediment or smell. Horses should be watered on entering and leaving the stable night and morning, and at intervals during the day, *and always before feeding*. Water given after feeding, dilutes the gastric secretions, lowers the temperature of the stomach, interferes with digestion, and washes grain out of the stomach into the intestines before the digestive process is complete. As the effective digestion of corn can only take place in the stomach, its being washed into the intestines is not only a loss of nutriment but a source of irritation. When the water is hard, the use of rain water collected from roofs into a clean tank is preferable. Copious draughts of ice-cold water cause Colic and Inflammation of the Bowels, and water from deep wells should always be exposed to the air for some time so that its temperature may be raised.

WEED, SHOT OF GREASE, OR MONDAY MORNING DISEASE.

Cause.—Overfeeding, constipation, and neglect of regular exercise.

Symptoms.—This affection is usually associated with heavy fleshy-legged horses, and as a rule suddenly attacks one of the hind limbs, producing excessive lameness and pain on movement. The leg swells quickly from above downwards, looking as if a string had been tied across the limb in an oblique direction, the result of congestion of the absorbent vessels and glands under the fore arm, or thigh. The usual feverish symptoms are present. As this disease frequently occurs after one or two days' idleness, the term "Monday Morning Disease" is sometimes applied to it, and in some parts of the South of England it is known as "Inflammation of the Kidney Vein," or "Shot of Grease."

Treatment.—For slight cases all that is necessary is to place the animal on a light diet and on no account give corn. Apply repeated hot water fomentations, to which add 1 oz. of "Gaseodyne" to the gallon of water. In a few days rub in the "White Chemical Extract," once or twice daily. Gentle exercise is absolutely necessary, and if the bowels

are constipated give a "Black Physic Ball" as directed, this to be followed up by full doses of the "Vetalenta" every six or eight hours.

With convalescence gradually introduce a few oats, and small doses of the "Kossolian Blood Salt"* daily. Repeated attacks lead to permanent enlargement of the limb (Elephantiasis) which is incurable. In certain cases great benefit has arisen from using what is termed a bandage, made of soft meadow hay (not too tightly twisted) round the limb. Commence at the foot and roll this bandage loosely up to the top of affected limb, then soak it with several pailfuls of cold water. Repeat every 3 or 4 hours.

Prevention.—The food on rest day should never exceed two-thirds of the ordinary allowance, and possibly no grain at all, and in animals subject to "Weed" always give an occasional "Diuretic Ball," and a dose of the "Kossolian Blood Salt" three or four times a week, for this gently stimulates the Lymphatics, and cools the system. Allow half-an-hour's exercise on Sunday mornings.

WHITES OR GLEET IN MARES.

Causes.—Generally by contagion, or debility of the system, causing inflammation of the vagina.

Symptoms.—A bad smelling, white glutinous discharge from the vagina, which often runs down the thighs.

Treatment.—Mares never breed whilst this condition is present, and the longer treatment is delayed the more difficult it is to cure. Syringe the vagina out with the "Whites" Lotion as directed on bottle, and brace up the weakened system by half-bottle doses of the "Gaseous Fluid" in a pint of old ale or stout twice daily, until an improvement is noticed, then once daily and so on. The vagina or bearing must be kept clean and well sponged with a weak solution of the "Globe" Disinfectant.

* A customer writes as follows:—"I take this opportunity of saying how very much improved our horses have been since we commenced using 'Kossolian Blood Salt.' Some time ago one of our mares developed what is commonly termed Monday Morning Disease or swelling of the lymphatics in the hind quarters which caused intense lameness. Since she has had her weekly dose, I am pleased to say the trouble has entirely disappeared."

WINDGALLS.

Causes.—These commonly arise from over-exertion, concussion or irritation of the parts, and are generally regarded rather as evidence of honest labour than an indication of unsoundness. The term “Windgalls” is a misnomer, as the swellings contain fluid and not air as the ancients thought. A distended condition of the synovial bursæ at the back of the fetlock is noticed, which appears as a soft puffy swelling varying in size. As a rule Windgalls do not seriously affect the horse’s movements, but they are unsightly and objectionable and should be removed if possible.

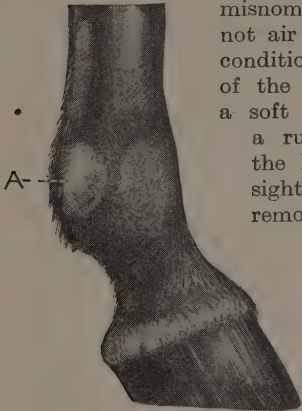


Fig. 43.

A. Seat of Wind-Galls.

Treatment.—Rest the animal as much as possible, and if there be any heat or tenderness, resort to hot water fomentations. A flannel bandage steeped in vinegar is good treatment to commence with—this to be followed by rubbing in the “Chemical Extract” once or twice daily. Later on use cold water instead of hot. Give an occasional

“Diuretic Ball” and feed on a light, laxative diet. Hand rubbing is frequently of great benefit, and judicious bandaging also does good, especially if soft pads of tow slightly moistened with the “Chemical Extract” are placed directly over the swellings. For stubborn cases give small and repeated applications of the “Brown Blister Ointment,” but use only just sufficient to raise a slight scurf each time.

WORMS.

General Symptoms.—We may suspect their existence in the horse if he has a staring or unthrifty coat and loses flesh in spite of a voracious or capricious appetite; in bad cases the patient even clears the bedding from the loose box. The skin also looks as if stretched tightly over the body, the bowels may be either loose or costive, and there is usually a “mealiness” to be seen under the tail, with consequent irritation. When the worms inhabit the rectum,

such as the *Oxyurus curvula*, the animal generally rubs his hind quarters and tail against the wall, causing the hair to get rubbed off. The absence of worms in the dung is not proof positive that an animal is free from them, for in some instances this can only be diagnosed negatively, by the poor condition, loss of usual energy, and absence of any other cause. In *suspected* cases it is always a safe thing to give a "Worm Ball" or "Powder" on an empty stomach. The following parasites are those most commonly met with:—

1. Ascaris Megalocephala, or Common Round Worm.—This is mostly found in the stomach and small intestines, and is the largest species of its kind. It has a smooth, rigid

body, and is yellowish-white in colour. Life history unknown. The head is distinct, and has three lips which are constricted in their middle, and have comparatively large teeth on their free margin. The male is about seven inches long, but the female varies from sixteen to eighteen inches in length. Some well-known authorities estimate that a female *Ascaris* produces about 2 ozs. of eggs yearly; so seeing that a horse may harbour over a thousand, it only shows what a lot of the animals' ingesta or food is used to produce them, in addition to that required for the worms' vital processes.

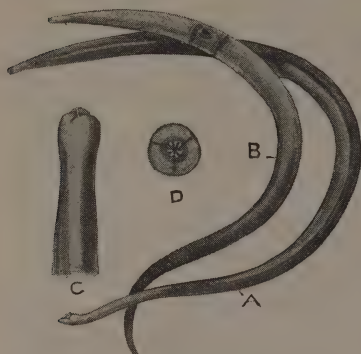


Fig. 44. Round Worm
(*Ascaris Megalocephala*).

Length from 5 to 10 in.

- (A) Male. (B) Female, showing genital opening and pointed extremity. (C) Side view of head. (D) Top view of head showing tri-lobed lips and teeth.

Treatment.—Commence by giving a "Black Physic Ball" as directed, and when this has properly acted give a "Worm Ball," or "Powder" night and morning for a few times. After the worms have been expelled give nourishing diet, and see that the drinking water is pure. Although we frequently see on post-mortem examinations numerous worms of this type and others which we never suspected during life, it must be always borne in mind that they live

at the expense of their host. This being so, treatment is most essential to the well-being of the patient. It very often happens that a course of tonic medicine such as the "Kossolian Blood Salt" is all that is required to remove these intruders, especially if given in the spring of the year, or when horses are first put on green-meat or roots.

2. Strongylus Armatus, or Palisade Worm.—The head of this worm is lobular, flattened and truncated, and armed with a number of upright denticles arranged after the fashion of a circular saw. It is said to be the most dangerous worm found in this country, as it pierces the tissues and lays up in the junction of the blood vessels, often causing aneurisms. The posterior ray of the hood of the male is three cleft. They vary in length from an inch and a half to two inches, and are nearly twenty times as long as they are thick. They hold firmly to the mucous membrane of the cæcum and large colon, which forms at the point of adherence a small black dot. A well-known Veterinary authority counted more than a thousand on a surface of two inches, and estimated more than a million in one patient. The *Strongylus Armatus* is generally found in association with the *Strongylus Tetracanthus*, and is thought by many to be a phase of its existence.

Treatment.—Commence by giving a warm bran mash over-night, and a "Worm Ball" or "Powder" every morning on a fasting stomach, for three or four days, this to

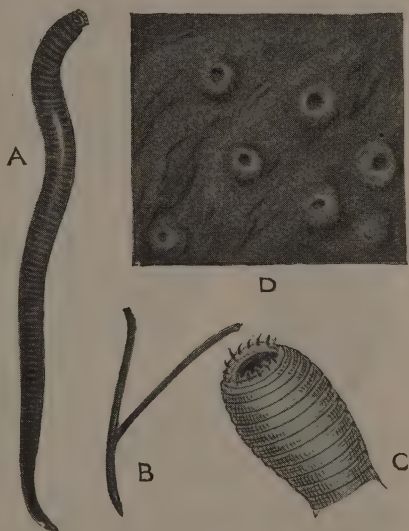


Fig. 45. Palisade Worm
(*Strongylus Armatus*.) (After Neumann).

- A. The Worm greatly magnified.
- B. The same, natural size, often found coupled.
- C. Head enlarged, showing teeth.
- D. Inside lining of Intestine, showing small tumours formed by the adhesion of the Worm.

be followed by a "Black Physic Ball." The diet to commence with should be light and laxative; but later on let it be of better quality, little and often, such as good old crushed oats, linseed cake, and a little unchopped hay or clover night and morning. Put a lump of rock salt in the manger and give an occasional dose of "Kossolian" to help on to condition. In bad cases the "Broncholine" is preferable to the "Worm Ball" or "Powder."

3. The *Oxyuris Curvula*, Pin or Whip Worm.—

This worm is partly transparent and is marked with transverse striæ, and is about an inch and three-quarters in length

when of full size. The female of this worm, which is sometimes known as the "Maw-Worm," is about four inches long, and is that most commonly met with. Its curved shape and pointed tail render its recognition easy, as it looks so much like the end of a whip. It is met with throughout the large intestine, but is frequently seen partly projecting from the anus, causing the animal to rub the hair off his tail, etc. Accompanying these worms, a light yellow waxy substance (eggs) is often found adhering

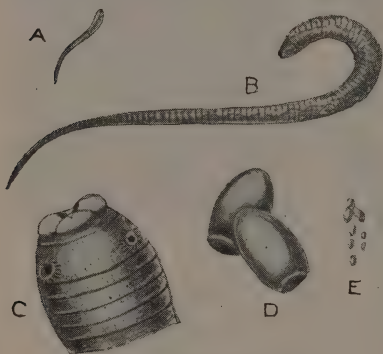


Fig. 46. Pin or Whip Worm
(*Oxyuris Curvula*). (After Neumann.)

(A) Male. (B) Female. (C) Head or Mouth.
(D) Egg, greatly magnified. (E) Eggs,
natural size.

to the skin immediately below the anus.

These worms are dung feeders, which means that they live on the contents of the alimentary canal and are unlike the *Strongylus Tetracanthus*, which is essentially a blood sucker.

Treatment.—Fast the animal for about twenty-four hours or feed very sparingly, then give the "Red Worm Mixture" once daily for three days, either in gruel or linseed oil, this to be followed by a brisk purge such as a "Black Physic Ball." A nutritious and rather laxative food is indicated for several days, then a course of tonic medicine, such as the "Kossolian Blood Salt,"* say every morning, and

* Several of our customers have found that a full dose of this preparation given in about half a pint of warm water forms a most excellent drench for expelling Round Worms.

occasionally a little linseed oil at night. Enemas of salt and water are very useful after the animal has been back-raked. If this Mixture is not at hand, the "Worm Ball" or "Powder" can be given instead. It must not be supposed that because no worms are seen to come away after dosing, that the treatment should be discontinued, or that there are none present. This is very often a fallacy, for if there are any worms, the medicine kills them, and we have found on careful examination of the dung that they have become digested. Anointing the inside of the anus with the "White Chemical Extract" will allay the itching.

4. *Strongylus Tetracanthus*, or Red Worm.

This is the most dangerous of all horse parasites and causes greater ravages than any other, as its presence in many cases is overlooked owing to its smallness. The female measures from half to one and a half inch in length, and is larger than the male, which is from one-eighth to half an inch in length. This worm is usually of a bright blood red colour, but may vary from almost white to a

dark brownish red, the colour largely depending upon the amount of blood it has sucked from the capillaries of the intestinal mucous membrane. In very bad cases, if the intestines of the host be opened immediately after death, the whole of the mucous membrane of the colon and cæcum will appear one seething mass of worms, hundreds of thousands being visible. If the mucous membrane be scraped clear of these, numerous little dark coloured spots are noticed on the surface, varying in size from a pin's head to a pea; each of these will be found on opening to contain a worm coiled upon itself. The *Strongylus Armatus* is frequently found associated with the *Strongylus Tetracanthus*, and after all the difference is practically in point of size only.

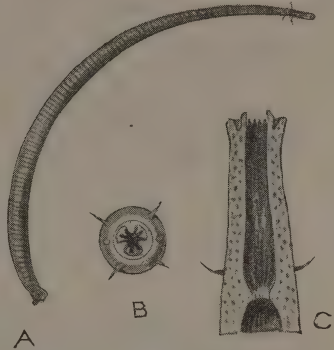


Fig. 47. Red Worm (Enlarged.) (*Strongylus Tetracanthus*). (After Neumann.)
 A. Adult Worm, showing its tapering form.
 B. Mouth, highly magnified, showing suckers.
 C. Section through head and throat, showing teeth, etc., highly magnified.

Symptoms.—Those most prominent are Anæmia, loss of spirit, bad smelling Diarrhœa, or perhaps Constipation, and very soon the affected animals rapidly lose flesh and become Hide-bound. The eye is dull, appetite variable, urine rather thick and yellowish, and very often large dropsical swellings appear under the belly and sheath. It must not be forgotten that a horse may be affected badly with these parasites and yet not a single one may be seen in the dung—but the best test to ascertain if these parasites are present or not is to break up the droppings and examine same carefully with a magnifying glass.

Treatment.—The “Cod Liver Oil Powder” will be found of immense benefit in these cases, and seeing that the blood is bound to be very impoverished add a little of the “Kossolian Blood Salt” to the food, once daily. Allow three or four eggs daily, 4 ozs. of common salt, and see that the drinking water is absolutely pure. Give a dose of the “Red or Tape Worm Mixture,” first thing in the morning on a *fasting* stomach, for two or three days; then skip a few days and start again if necessary. Give the land a rest from horses, and dress it with half a ton of roughly broken rock salt to the acre, then roll it, for in a field without horses the worm dies, and as a consequence no more ova or eggs are produced. Bring horses into the yard early.

5. *Tænia Perfoliata*, or Tapeworm.—Tapeworms are



Fig. 48. Tapeworm
(*Tænia Perfoliata*).

A. Head and upper part
enlarged.

rather rare in the horse; but the one under notice is the commonest, and varies in length from one to four inches, its habitat being the large bowel. It has a squat head with two lobes, and the segments overlap each other like the tiles on the roof of a house.

Treatment.—Fast the animal in the usual way and give the “Red or Tape Worm Mixture” in a pint of linseed oil every week, until four doses have been given, and in the interval give a dose of the “Kos-

solian Blood Salt” in the food every night. Give good nutritious food, such as boiled barley and brán, milk and eggs, linseed jellies, etc.

WOUNDS.

These are among the most important events that happen to horseflesh, and every owner should have a fair idea as to the proper mode of treating them.

They are commonly caused by violence, such as kicks, blows, or by coming in contact with foreign bodies such as barbed-wire, etc., and are classified according to their nature, viz.:—

1. Lacerated or torn, usually produced from barbed-wire, etc.
2. Incised or clean cut as would be caused by a knife.
3. Contused, in which the parts are bruised and cut.
4. Punctured, made by pointed bodies.

General Treatment.—1. *Lacerated Wounds* arising from barbed-wire are very often both severe and extensive, and unless prompt measures are taken as regards treatment, septic poisoning soon sets in, which invariably results in death. Immediately a case of this description occurs, bring the patient into a well-ventilated stable and carefully wash or sponge the wound free from all dirt or grit with a solution of the “Globe” Disinfectant (say two or three tablespoonfuls



Fig. 49. Wounds caused through Barbed-wire.

to a quart of water) so as to check all putrefactive action. This done, bring the edges together as true as possible with strips of plaister and carefully clip away the hair so as to avoid it getting into the wound and setting up irritation. In cases where the wound is of considerable size it is often

necessary to stitch up the injury with thread (previously soaked in the above "Disinfectant Solution"), either using a perfectly clean and strong carpet needle, or, better still, a suture needle, for the purpose. Allow each stitch plenty of



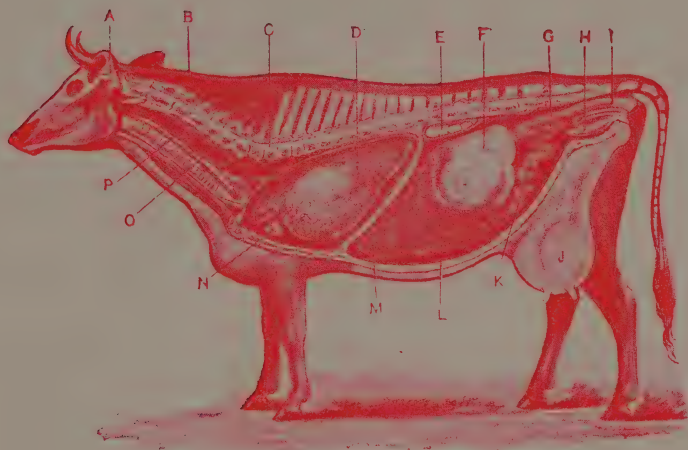
Fig. 50. Suture Needle.

hold, so as to avoid it tearing out should swelling commence, also fasten off each stitch with a knot and leave a small opening

at the bottom for the drainage of pus. After this apply daily some antiseptic cotton wool or clean soft rags soaked in the "White Chemical Extract," to the part, keeping same in place by a bandage, if practicable. These applications should be continued until the wound has a healthy surface. If the wound becomes what is known as "Proud-flesh" or it "Sloughs," smear a little of the "Chemical Extract" to its edges with a feather, which will excite granulation and quickly bring about a healthy surface; but in certain cases where a wound suppurates, it may be necessary to apply poultices before resorting to the above treatment. Feed on a light diet and give a "Black Physic Ball" once a week.

Note.—The treatment for the other kinds of wounds (2, 3, and 4) is practically the same as for Lacerated (1), but for the incised description it is necessary to keep the mouth open by plugging the bottom of it with a fresh bit of tow dipped in the "Chemical Extract" every 24 hours, so as to prevent false healing. For all ordinary cases of bleeding repeated cold-water applications are necessary, but when excessive this can be stopped by applying a bit of tow smeared with the "Extract," after which employ cold-water bandages. Sometimes a tourniquet, extemporized out of a pocket-handkerchief and a stick, can be applied with good results, turning the latter round and round.

COW.—The Internal Organs.



- A. Poll or Crest of Skull.
- B. Suspensory ligament of Neck.
- C. Spinal Cord extending from base of skull to base of tail.
- D. Full extent of left Lung.
- E. Kidney.
- F. Rumen or First Stomach.
- G. Uterus or Womb.
- H. Bladder.
- I. Rectum or terminal portion of Large Intestine.

- J. Udder.
- K. Small Intestine.
- L. Omentum or Thin Membrane, covering all the internal organs except liver and bladder.
- M. Diaphragm, cut near ribs.
- N. Heart.
- O. Windpipe or Trachea leading to Lungs.
- P. Gullet, leading to Stomach.

CATTLE.

ABORTION, PICKING OR SLIPPING OF THE CALF.

Causes.—At one time, improper feeding (especially the presence of Ergot in grasses and hay), fright and sympathy, etc., used to be regarded as the principal causes of Abortion. Competent veterinary authorities now, however, recognize that Abortion is due to "Bang's Bacillus," and that it can be transmitted through the intervention of certain media, such as infected urine, fæces or litter. Infection can also be carried by attendants on animals that have aborted; by the placental membranes, and dead foetus; or by the bull that has been used for the service of cows that have aborted. The infective material is said to retain its virulence for several months. It is not only the loss of the immature calf that is so ruinous to the dairyman, but the milk supply is considerably lessened, and there is a great chance of the cow being afterwards sterile.

Symptoms.—These resemble ordinary parturition; but in most cases there is a slight red or yellowish mucopurulent discharge from the vulva, and a general absence of the usual preparation for calving. Abortion usually takes place between the ninth and fifteenth week, but this varies considerably. The animal generally appears dull, and separates from the others. The foetus is usually born dead. It is an unfortunate fact that, from whatever cause it arises, Abortion shows a tendency to repeat itself at the next pregnancy, provided fecundation is successful.

Treatment.—When the contagion has reached the interior of the uterus and Abortion seems inevitable, nothing can be done but to allow it to proceed; it is, however, of the utmost importance to at once remove the patient from amongst the herd, to some isolated stall, until the vaginal discharge has ceased. If the aborted foetus is very big,

the placenta is usually retained, and must be removed. Keep the animal as quiet as possible, and give a full dose of the "Red Drench" in two quarts of oatmeal gruel, sweetened with treacle, especially if there is any tendency to constipation. After this, follow on with the "Gaseodyne" every four hours, until there are no signs of straining or over-excitement. The tail, shape, and hind legs (where the discharges run down) should be washed daily with soap and water containing a small quantity, say, 1 oz. to 2 quarts of water, of the "Globe" Disinfectant, and syringe out the womb with the "Antiseptic Abortion Mixture," as directed.

Burn the foetus and its membranes, also the infected bedding, and should the abortion have taken place in a field, remove the other cows in it to another pasture at once. Cows that have aborted are as a rule best fed off.

Preventive Measures.—Immediately a cow shows signs of Aborting, isolate her at once and leave her to calve herself; furthermore, on no account allow the man who attends her to come in contact with other clean in-calf cows, for he can easily carry diseased germs on his hands, boots, and clothing. Never allow a cow that has aborted to come in contact with other pregnant animals, and great attention must be given to disinfect the byres, stalls, "channels" behind cows, etc., by using the "Globe" Disinfectant as directed. The tail and hind-quarters of all healthy cows should be either sponged or sprinkled by means of a watering can, with the "Antiseptic Abortion Mixture" night and morning; and be given a dose of the "Vetalenta" twice a week from the third to the sixth or seventh month after service.

Sometimes the introduction of a thoroughly healthy and vigorous bull, and allowing the cows that have previously aborted to go over their season a few times, has been attended with very good results. On the other hand, some authorities recommend douching the uterus with a solution of Carbonate of Soda (2 ounces to 5 pints of water) just before "covering" so as to correct any acid state of this organ that may be present. In some parts of the country it is said that a goat allowed to run amongst cows acts as a good preventive of Abortion. Never employ a bull with any

discharge from the penis, and in all cases where abortion is suspected syringe out the sheath of the bull with the "Globe" Disinfectant solution (1 oz. to 2 quarts of water), and spray the cow's udders with the same solution after each milking. An ordinary garden syringe answers the purpose well.

ACTINOMYCOSIS, TIMBER OR WOODEN TONGUE.

Cause.—This disease is becoming alarmingly common in low lying swampy districts where straw is largely used, and active measures are required to eradicate the scourge. It is due to a vegetable parasite called the *Actinomyces* or "ray" fungus, which more particularly affects barley straw, the barbs of which lacerate the surface of the tongue or lining of the cheeks and in such parts the organisms develop. It may attack man, horses, cattle, and pigs; but is rarely conveyed by direct infection from one subject to another. An animal with a suppurating *Actinomyces* Tumour is a very fruitful source of danger to other animals in the place, since the discharge would infect the pastures, sheds, drinking tanks, etc. When the tongue is implicated it invariably becomes stiff and hard, thereby interfering with mastication, hence the name "Wooden Tongue." It may, however, affect the jaws and face of cattle. (See page 171 under Wens, &c.)

Symptoms.—Wasting of the body, and saliva flows freely from the mouth. The presence of the characteristic yellowish-pink nodules or ulcers on tongue causes the patient to roll this organ about a good deal, and to hold the nose up when attempting to swallow.



Fig. 51. A case of Timber or Wooden Tongue.

Treatment.—The only chance of successful treatment is to deal with the disease at the outset, and the following is advised: Allow only a light fluid diet and give an occasional small dose of the “Red Drench.” The mouth must be kept clean and washed out morning and evening with a solution of the “Wooden Tongue Cure.” Sometimes it is advisable to scarify the tongue with a sharp knife and then apply the “Cure” as above. In bad or chronic cases it is best either to slaughter the animal or to call in a qualified Veterinary Surgeon, and be guided by his opinion as to what should be done.

Prevention.—Keep the blood pure by periodical doses of “Kossolian,” and pay particular attention to the thorough disinfection of the stalls by using the “Globe” Disinfectant.

ANTHRAX OR SPLENIC APOPLEXY.

There is no animal, including man, that can claim exemption from this dread disease, but cattle are especially liable, and the complaint, unlike Black Leg, Quarter-ill, Joint-ill, etc., attacks animals at any age. In South Africa it is termed “Horse Sickness”; in America, “Texas Fever”; and in India, “Loodiana Disease.”

Cause.—It is an alteration in the blood, due to an organism called *Bacillus anthracis*. The disease can be transferred rapidly by inoculation and is recognized as being highly contagious.

Symptoms.—The beginning of an outbreak is often marked by one or two animals, under two years old, being found dead. If they are cut open, the spleen or milt is found enlarged, and engorged with black tarry blood, which, when the organ is held up, gravitates from one end to the other, showing its tissues to be disintegrated and broken down. The primary symptoms are those of fever and general constitutional disturbance, abdominal pain, accelerated respirations, staggering gait, delirium, and in some cases paralysis. Bloody fæces are discharged and dark blood oozes from the nostrils, anus and vulva.

Treatment.—The disease is generally so rapidly fatal that no time remains for treatment, even if it were efficient or permitted. Anthrax is, however, included in the

Schedule of the Contagious Diseases Act, and must be reported to the nearest police constable. The police will prescribe procedure as to burial, and general disinfection.

Prevention.—All healthy animals should be removed from the field in which the outbreak occurred, and comfortably housed. Dress infected lands with seven hundred-weights of crushed rock salt to the acre. The animals should be setoned in the dew-lap and given a dose of the "Red Drench," which may be repeated in two days, this to be followed by a dose of the "Kossolian Blood Salt" once daily during the outbreak. If possible, they should be fed with food grown on another farm, and care should be taken that the water supply is above suspicion. All stalls, sheds, etc., that have been occupied by cattle affected with Anthrax should be cleansed and thoroughly disinfected with the "Globe" Disinfectant. Attendants should be warned that this disease is easily communicable to man by inoculation.

APTHA, THRUSH, OR ULCERATED GUMS.

Cause.—This is generally due either to direct irritation from some prickly plants, etc., or to derangement of the digestive organs, especially the stomach.

Symptoms.—On examining the mouth, small blebs or vesicles are seen, filled with watery fluid, which look like small white ulcers when they burst. The blebs seen in Foot and Mouth Disease are found to be much larger and not nearly so numerous, and when they burst leave ulcers. Sometimes the mouth is hot and inflamed, and a lot of "slobbering" is seen, due to difficulty in swallowing.

Treatment.—Give a dose of the "Red Drench" in a quart of gruel and one pound of treacle, so as to expel any irritant substance from the stomach and intestines, and repeat on the third or fourth day, during which time feed on soft foods, such as gruels, etc. The mouth must be washed out two or three times daily with a solution of the "Alumine" (as directed on bottle) or the ulcers dabbed with the solution by means of a rag or bit of sponge. Place some rock salt in the manger, and later on sprinkle all food with the "Kossolian Blood Salt" three times a week.

BLACK LEG, QUARTER EVIL, OR BLACK QUARTER.

Causes.—This is a specific disease due to invasion of the system by a micro-organism or bacillus, which locates itself in some of the tissues of the body, such as the limbs,



Fig. 52. (A) The location of the Disease.

loins or shoulders. The organism multiplies rapidly, causing derangement of the blood and system generally. Black Leg seldom affects old or pregnant animals, and is generally associated with cattle under two years of age, and those in good thriving condition. In South Wales this disorder is known as "Murrain."

Symptoms.—The patient appears languid, hangs its head, and the eyes have a strange steely appearance. An irregular swelling commences in some part of the

body, either about the shoulders, loins or hindquarters, accompanied by fever and constitutional disturbance. The puffy swelling on the body is at first hot and painful, which may cause lameness, and if the hand is passed over it, it gives a crackling sound which is diagnostic, this being caused by an accumulation of gases beneath the skin as a result of decomposition.

Preventive Treatment.—Immediately symptoms of this disorder are noticed amongst any of the herd, well house those that appear to be doing extra well, and give a dose of the "Red Drench" in plenty of warm gruel with treacle. After a day or two turn them out in a new pasture if possible and follow up with the "Kossolian Blood Salt"* twice a week for three weeks or a month. Setoning the dewlap or brisket on one side, or from one side to the other, has been followed with very good results, but this to be

* A customer writes :—"In my part of Wales, Quarter-ill is very prevalent, but I find that by giving calves a few doses of the "Kossolian Blood Salt" as soon as they are weaned acts as a safe and effectual preventive. They should have another dose before they are turned out in the following Spring."

effectual should be done about September. The seton or piece of white linen tape must be smeared with the "Brown Chemical Extract," about once a week, and left in until the Spring. Avoid sudden changes from a poor to a rich pasture, and see that the stalls are dry and well drained. Accustom calves to take small quantities of linseed cake, crushed oats or bran, not forgetting to give the "Kossolian Blood Salt" occasionally.

The method of disposing of the carcasses of animals dying of Black Leg should be similar to those prescribed by the Board of Agriculture for Anthrax.

Recently, vaccination as a preventive against "Black Leg" has been revived with a fair amount of success; and the vaccine finding the most favour is called "Blacklegine," a form prepared by the Pasteur Vaccine Co., but we believe this is only supplied to the Veterinary profession.

BLAIN OR HAWKS.

Cause.—Usually the result of a chill, and often affects newly-calved cows suddenly, especially after a long journey by road or rail.

Symptoms.—Saliva flows freely from the mouth, little fever, and respiration is considerably interfered with. The tongue becomes enlarged, especially at its base, and the mucous membrane covering it and the inside of the lips are raised in the form of blebs or small blisters, which enlarge rapidly, and ultimately burst.

Treatment.—Isolate the diseased from the healthy, and give a dose of the "Red Drench"* in a quart of thin gruel, to which add treacle, repeating in half-packet doses for a day or two. Allow a light and nutritious diet. The blebs or bladders may be opened carefully with a pointed stick, afterwards washing the mouth out with the "Alumine," as directed, twice daily for a few times. In bad cases the "Vetamenta" is indicated night and morning, as it has a special healing action on the unhealthy mucous membranes, and rapidly reduces any feverish symptoms.

* Some of our customers strongly advocate a dose of the "Alcoholic Ether" added to the "Red Drench."

BLOOD-STAINED OR PINK MILK.

Causes.—Amongst the most likely may be mentioned bad milking, injury to the udder causing rupture of the capillary blood-vessels which ramify through it, exposure to cold and damp, eating acrid plants, or the formation of an ulcer in the gland-duct. This condition is especially prevalent among young cows after their first calf, and unless promptly treated results in the far more serious condition called Garget.

Treatment.—Place the animal in a warm stall, free from draught, and administer the “Red Drench” in a quart of warm oatmeal gruel, to which may be added the yolk of an egg. This dose may be repeated on the third or fourth day, and will be the means of cleansing and cooling the system. Foment the udder frequently with warm water, and after drying the part carefully with a soft cloth, apply gently the “Chemical Extract” to the quarter from which the blood comes. Milk the three sound teats into the usual pail; but use a separate vessel for the unsound quarter, the milk of which may be given to the pigs and calves, as it ought not to be used for human consumption. Keep the affected quarter well stripped out, and should there be any difficulty in doing this, employ a Teat Syphon. If the blood-



Fig. 53. The Teat Syphon.

stained milk arises from the animal eating some acrid plants these must be withheld at once and a packet of the “Red Drench” given, to which add half a pint of linseed oil; these to be mixed together and given in a quart of gruel. Repeat in half doses the second day, and so on according to the state of the bowels. During treatment let the diet be light and of an easily digested character, and give a few doses of the “Gaseous Fluid” in a little old ale or stout, so as to brace up the blood vessels and system generally.

BROKEN HORNS.

Cause.—Sometimes a cow will become fixed by her horns, and in trying to get free a portion of them may be damaged or stripped off with or without injuring the core.

Treatment.—Commence by cleansing the injured part with warm water, and then dry with a cloth. This done, get the horn in its proper position and dress the wound with the "Antiseptic Dressing." Having let this soak in for a minute or two, smear on some Archangel Tar, and then wrap round with some tow. Having procured a long linen bandage, wind it around both horns in the figure of 8 fashion. If the horn and core are severely crushed it should be amputated at once, and dressed with the "Antiseptic Dressing."



Fig. 54. A case of Broken Horn.

BRONCHITIS OR INFLAMMATION OF THE BRONCHIAL TUBES.

Bronchitis denotes inflammation of the small air tubes of the lungs, and often affects calves during the winter and early Spring.

Cause.—Exposure to cold and wet, badly ventilated boxes, and carelessness in administering medicines in drenching, the medicine going into the windpipe or "wrong way" as it is termed. A neglected cold often develops into Bronchitis, and must always be considered dangerous.

Symptoms.—Similar to those of ordinary Catarrh, but more severe, and the patient exhibits greater pain and distress in the act of breathing and coughing. Fever is invariably present, and if the ear be placed against the chest wall a peculiar wheezing noise is heard.

Treatment.—Place the animal in a well-ventilated loose-box and clothe heavily; also feed on a light and laxative diet. Give small and repeated doses of the “Red Drench” so as to combat the fever, and last thing at night give a full dose of the “Alcoholic Ether” in a quart of gruel and treacle. To relieve the difficult breathing, hot water cloths sprinkled with turpentine, should be applied continually to each side (behind the shoulders), or these parts can be well rubbed once daily with the “Brown Chemical Extract.” If there is a discharge from the nostrils, steam them over a bucket of hot water, twice daily. For the cough give the “Special Cough Elixir” as directed. The food during convalescence may be of a better quality, but avoid dusty fodder and a draughty stall. If the animal is very weak, beat up three or four eggs with a dose of the “Gaseodyne,” and give once or twice daily in a quart of oatmeal gruel.

BULL-BURNT, CLAP, OR SCALD IN BULLS.

Cause.—This denotes gonorrhoea or inflammation of the penis or urethra, caused by service with a cow that is in all probability affected with “Whites” or Leucorrhoea.

Symptoms.—The bull’s penis is found to be inflamed and swollen on the inside and within the sheath, discharging a thick glairy fluid. There is more or less constitutional disturbance and feverish symptoms may be present.

Treatment.—In bad cases it is necessary to call in a qualified “Vet,” for it becomes necessary to get the penis out, cleanse it with warm soap and water, and then by means of an ordinary glass syringe, inject up a solution of “Sanosol.” This will have to be repeated daily for some time. Give a packet of the “Red Drench” occasionally and a cooling diet. On no account should the bull be allowed to serve any cows till cured. If the Bull-burnt merely represents an inflamed sheath, and this possibly extending to the side of the penis, all that is necessary is to wash out the sheath as above, and after carefully drying, to anoint the penis with a *little* of the “White Chemical Extract.” Sometimes washing both the sheath and penis with the “Antiseptic Abortion Mixture” daily, has the desired effect.

CALVING TABLE.

Showing at a glance when FORTY WEEKS will expire from any day throughout the year:—

January	1..	October	8	July	1..	April	7
„	14..	„	21	„	14..	„	20
February	1..	Nov.	8	August	1..	May	8
„	14..	„	21	„	14..	„	21
March	1..	Dec.	6	September	1..	June	8
„	14..	„	19	„	14..	„	21
April	1..	January	6	October	1..	July	8
„	14..	„	19	„	14..	„	21
May	1..	February	5	November	1..	Aug.	8
„	14..	„	18	„	14..	„	21
June	1..	March	8	December	1	Sept.	7
„	14..	„	21	„	14..	„	20

CALVING OR PARTURITION.

The natural presentation of the calf is with the muzzle resting between the knees and the forefeet protruding through the vulva. Should the presentation be an unnatural one, professional aid must be called in *at once*, as every endeavour should be made to get the calf into a proper position, and this cannot be performed by the inexperienced. When a cow happens to have two calves she also has two cleansings.

The usual sign of approaching parturition is swelling of the uterus. The mammary gland or udder soon becomes distended with what is termed “Colostrum,” or first milk, which is aperient in its action. The external “shape” increases in size and there is also a discharge of thick mucus from the vulval opening and relaxation of the pelvic ligaments. Later on labour pains appear, and the amnion or “water-bag” protrudes like a bladder from the vagina.

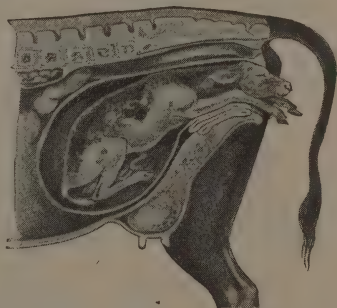


Fig. 55. Natural presentation.

CASTRATION OF THE BULL.*

The age for castration in Bull-calves varies with the use to which the animals are likely to be put; for instance, if destined for slaughter they are either done at birth or two or three months afterwards. Two incisions about $1\frac{1}{4}$ to $1\frac{3}{4}$ inches in length are made on the lower extremity of the Scrotum or bag, and having got the testicle out, the testicular cords are seized and the Caustic clams placed on them. The after-treatment consists in applying the "Anti-septic Dressing" daily as directed. In the South of France, bulls intended for working are not operated upon until some months have passed, on account of the influence which the testicles have on the development of bone and muscle.

CATTLE-ITCH OR MANGE.

Cause.—This is caused by a parasite very similar to that which produces scab on sheep, called *Acarus Bovis*, but is not easily detected without the aid of a hand lens. It lives largely on the surface of the skin, although it frequently burrows beneath it. Cattle-Itch is very infectious, and is invariably due to want of cleanliness, or poverty.

Symptoms.—Intense itching on neck and shoulders, which soon spreads along the back and sides, causing the animal to dig at the affected parts with either the teeth or horns, or to rub against posts, etc. In the early stages the coat is noticed to be in an unthrifty or scurfy condition, and later on the skin develops a sticky exudation or crust, which

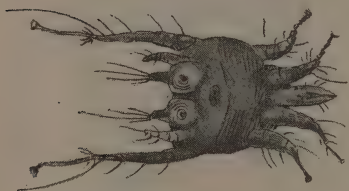


Fig. 56. The Mange Parasite.

causes the hair to fall off, leaving bare patches.

Treatment.—Isolate at once the diseased from the healthy and thoroughly cleanse and disinfect all stalls, posts, etc., with the "Globe" Disinfectant. Apply the "Xemos"† as directed, and pay particular attention to cleanliness.

* NOTE.—Castrating instruments of all kinds will be found in Price List.

† If an Ointment is preferable the "Sulphuretted Ointment" can be used instead.

Always apply the remedy *beyond* what appears to be the affected parts. On the third day wash off with "Carbolic" Soap and water, and repeat the process again if necessary. Give an occasional dose of the "Red Drench," to cool and cleanse the system; this to be followed by a course of the "Kossolian Blood Salt," say once daily for a week or ten days, as these parasites are blood-suckers and hence very debilitating. Feed well.

CATTLE PLAGUE OR RINDERPEST.

This may be described as an acute contagious and infectious disease of a malignant type which runs its course rapidly. As a rule it is imported into this country from either Russia or China, and in South Africa it is said to have reduced the livestock by 50 per cent.

Symptoms.—Fever, quickened breathing, weak pulse, watery discharge from mouth and nostrils, and shivering fits. The head and ears droop, coat stares, and a dirty eruption is noticed in the mouth and vagina. A very offensive diarrhoea soon sets in, often mixed with blood or purulent matter.

Prevention.—As this disease runs such a rapid course no cure can be expected; this being so, the great aim must be prevention. Every attention should be paid to burning the carcasses of all animals that have died from the malady, and to thoroughly disinfect all stalls, etc., with the "Globe" Disinfectant. Immediately an outbreak occurs give a dose of the "Red Drench" twice a week, keeping up the strength afterwards by occasional doses of the "Gaseous Fluid."

CHOKING.

Cause.—This frequently arises from a piece of turnip or potato becoming lodged in the gullet (œsophagus), thereby causing great distress.

Symptoms.—Digestive action, or rumination, becomes suspended, and as a consequence fermentation of the food contained in the stomach rapidly sets in, producing what is termed "Hoven" or "Blown." If this condition is not quickly

relieved, suffocation and death ensue, owing to pressure of the distended stomach on the lungs and heart. There is usually a good deal of foaming at the mouth and stamping of the feet.

Treatment.—First of all pour down the throat a pint of linseed oil, and then carefully pass the probang into



Fig. 57. The Cattle Probang.

the throat (the mouth of the animal being kept open by means of a gag) until it reaches the impacted substance. Now apply firm but steady pressure until the substance yields, when it may be forced down into the stomach. When this operation has been accomplished give a full dose of the "Gaseous Fluid" in two quarts of gruel, and feed lightly for a few days on mashes, avoiding solids. If there is any danger from over-swelling of the stomach the Trocar and Canula must be employed *at once*, as described under "Hoven or Blown" (see page 133), or in extreme cases a clean knife can be used.

COLD, CHILL, OR CATARRH.

A cold or chill should on no account be regarded lightly, but treated by careful nursing and appropriate remedies, otherwise there is a great risk of it resulting in Bronchitis or Broncho-pneumonia.

Causes.—This ailment is most prevalent in the Spring and Autumn and is produced by exposure to cold and wet, but often occurs when cattle are first brought in from the fields and placed in crowded or ill-ventilated sheds.

Symptoms.—Rigors, watery discharge from the nose and eyes, dryness of the muzzle, horns and extremities cold, high coloured urine, with slight elevation of temperature. As a rule diarrhoea is present, and there is cessation of rumination. With cattle the latter symptom is always a sure sign that something is amiss with them.

Treatment.—Place the animal in a well-ventilated and comfortable stall, and clothe well, also give a dose of the “Red Drench,” preferably in a quart of warm ale or warm oatmeal gruel, sweetened with sugar or treacle, and repeat if necessary. The last thing at night give two wine-glassfuls of “Alcoholic Ether” in a warm mash to excite perspiration, but if a severe attack three wine-glassfuls of this medicine may be used. The nostrils should be continually washed and steamed over a bucket or nose-bag containing hot bran, or, better still, some scalded hay-seeds, so as to facilitate the discharge. The diet must be light and nutritious, such as bran mashes and green meat, and to drink, linseed jelly and milk, or hay tea, gruel, etc. With convalescence give the “Gaseous Fluid,” as directed, in old ale or stout. Feed well. In cases of chill, etc., where cows are situated some distance from the farm with no facilities available for making gruel, etc., the “Vetamenta” will be found most useful, as it only requires the addition of a little milk, or may even be given neat in cases of emergency.



Fig. 58. Cow with bad cold.

CONSTIPATION WITH FEVERISH SYMPTOMS.

Causes.—This usually arises from weakness of the digestive organs, improper dieting, or may be due to some impediment as intestinal calculi, etc. Constipation frequently presents itself with diseases in other parts of the body.

Symptoms.—Failure to pass dung in the usual way, and exceptional hardness of that which is voided, which is invariably coated with mucus. If unrelieved this accumulation may cause gangrene. Fever and flatulence are often present.

Treatment.—In stubborn cases give one or two doses of the “Red Drench,” according to how long the constipation has been noticed, in three quarts of warm water gruel, to which a pound of treacle may be added. Endeavour to assist its action by copious enemas of warm soapy water or oil and water, using the Clyster Syringe for the purpose. Repeat in ten or twelve hours if the bowels are not sufficiently open. After the bowels have acted properly give a smaller dose of “Red Drench” every other day. In order to promote appetite and restore tone to the digestive organs, give better food, with a dose of “Kossolian Blood Salt” once or twice daily. A *gradual* return to the ordinary diet is very necessary, with an occasional dose of the “Red Drench.”

Constipation in calves is often due to their not being given the first milk or beastings. In such cases give a dose of the “Balsamic Castor Oil” beaten up in the yoke of an egg, adding to it a little sweetened gruel, and repeat if necessary.

COUGH IN COWS AND CALVES.

Cause.—A Cough is not a disease in itself, but only a symptom, and contrary to popular ideas, not always a symptom of disease of the respiratory organs, for the irritation may be reflex and proceed from a stomach disorder. As a rule, however, it usually results either from a cold, prolonged dry feeding (especially on dusty or inferior hay), or from breathing bad air of ill-ventilated sheds. What is recognized as the common “cow-shed cough” often lingers among dairy cows until they are turned out in the Spring, when pure air and succulent grass replace the dry diet and polluted atmosphere to which they have been subjected during Winter.

Treatment.—Keep the animal in a tolerably warm but airy stall, giving nourishing food, such as bran, pulped roots, ground oats and long cut chaff, and it is a good plan to pour a quantity of hot linseed mucilage over the whole. Give some sweet hay daily, long fodder being absolutely necessary for rumination to take place satisfactorily.

Feed little and often, and give water in which linseed has been boiled for drinking purposes; also rub a little of the "Chemical Extract" into the throat, and down the wind-pipe daily. Give a dose of the "Special Cough Elixir" in a quart of linseed or oatmeal gruel twice daily for a few days, then stop for a day, and give it only once daily, and so on. If the cow appears to be debilitated and off appetite, give occasional doses of the "Gaseous Fluid" in some warm old ale or stout. This simple treatment will soon make a cure, provided the lungs are not structurally affected as in Consumption or Tuberculosis. The cough in the latter case is usually chronic, and there is much debility to contend with.

Coughs in Calves should be treated much in the same way, the "Special Cough Elixir" being particularly applicable, but should a number of animals be affected it rather indicates that the complaint is due to parasites. (*See Parasitic Husk or Hoose*, page 136).

COW BEFORE CALVING.

Treatment.—If the cow is in really good condition put her in a pasture that is rather bare, so that she will be obliged to exercise herself to get a living. It is very important to give four or five days before she calves, a dose of "Red Drench" in plenty of treacle gruel, and a spare diet consisting of bran mashes and a little linseed meal or cake. This can be repeated twenty-four hours before calving when Milk Fever is feared. Just before parturition, remove the animal to a clean and well-ventilated loose box, and leave her there with the calf for about five days or until the beastings have been expelled, but on no account turn her out to grass until she has calved. This treatment, well carried out, will act as the best and safest preventive of that often fatal disorder "Milk Fever." Should the cow be in a debilitated state before parturition, omit the "Red Drench" and give instead a few half bottle doses of the "Gaseous Fluid" in some warm ale or stout. In summer, in-calf cows should be placed in a shed during the heat of the day, in order to protect them from the fierce rays of the sun. Any annoyance occasioned by flies can be avoided by using the "Anti-Fly Dressing," as directed.

COW AFTER CALVING.

Treatment.—If a cow be a little feverish after calving, with a full bag, give a dose of the “Red Drench” in a quart of thin gruel with one pound of treacle, and keep her quiet for three or four days. Should she become very restless, follow on with a dose of the “Gaseodyne” every six hours. On the other hand, if the animal be exhausted or debilitated, the “Red Drench” should be omitted, and the strength kept up by a few doses of the “Gaseous Fluid” given every four hours, either in warm gruel or in a pint and a half of warm ale or stout. Do not allow cold spring-water too soon after calving, and only give nutritious and digestible food, such as mashes, a little cake, and as much grass as the cow feels inclined to take.

Let the calf have all the milk it wants for forty-eight hours, and only in the case of a very heavy milker should the milk be drawn off. After this, clean stripping and the general encouragement of milk secretion is indicated. If the calving takes place in the winter time, the “Red Drench” may be given in a pint and a half of warm ale, instead of gruel.

It is by no means uncommon for a heifer to give little or no attention to her offspring; in such case sprinkle over the calf a little bran or meal, in order to attract the notice of the mother. As soon as she is induced to lick her young, the natural instinct is quickly awakened.

COW POX.

Cause.—This is produced by a specific organism; and it is the vaccine of this disease that is employed as a preventive of human small-pox. The contagion is generally carried by the milker's hands. Although Cow Pox is not of frequent occurrence it does now and then appear, and when this happens active measures must be taken; for if not, inflammation of the udder and sometimes death supervene.

Symptoms.—The affection is ushered in with severe feverish symptoms, and in a short time numerous red patches are noticed on the udder and teats, these soon developing into vesicles and pustules, varying in size from a pea to a

sixpence. These vesicles attain their maximum development on the eighth or tenth day, and then reach the pustular stage, which continues for two or three days longer. An attack generally lasts over several weeks, and during this time the milk supply diminishes and is unfit for food.

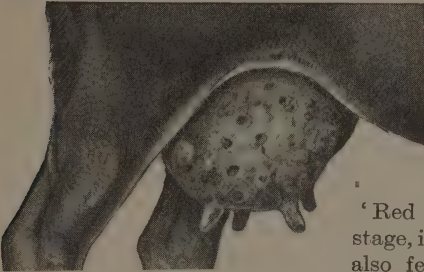


Fig. 59. Cow Pox.

Treatment.—Separate at once the diseased from the healthy, and give half doses of the ‘Red Drench’ during the febrile stage, in plenty of gruel and treacle; also feed on a light and easily digested diet. Foment the affected parts twice daily with warm water, taking care to dry afterwards with a soft cloth, and then gently anoint daily with the ‘Sore Teat Lotion,’ or ‘Udder Salve.’

Retention of milk is apt to occur from scabbing over of the extremity of the teat; this must be prevented by regularly drawing off the milk by means of a Teat Tube.



Fig. 60. Teat Tube.

The above instrument is made for the purpose, and may be retained in position by a piece of tape. The milker must thoroughly cleanse his hands after attending the affected animal, for the disease is readily propagated from one cow to another; also see that the stalls are thoroughly cleansed and disinfected with the ‘Globe’ Disinfectant. Avoid too much milk-forcing food. If Cow Pox breaks out in April, it often runs on all the Summer, unless it is treated at the outset. In many districts this complaint often appears on newly-calved heifers, and in such cases immediate treatment is required.

COWS TURNING, OR THOSE THAT WON'T HOLD THE BULL.

Cause.—This often happens after cases of Abortion, due to vaginal acidity or an infectious Vaginitis.

Symptoms.—The cow often has a slight discharge from the vulva, and fails to come in season.

Treatment.—Commence by giving a full dose of the "Red Drench" in a quart of oatmeal gruel and a pound of treacle and repeat in half doses if necessary. The "Uterine Solution" will have to be employed as directed; but about two or three days before service, syringe up the vagina one ounce of Bicarbonate of Soda to one quart of tepid water. Change the pasture and food, if practicable, and give the "Kossolian Blood Salt" twice daily for ten days or a fortnight before service. (*See also* under Sterility, page 159.)

DIARRHŒA OR SCOUR IN COWS AND HEIFERS.

Causes.—This troublesome disorder may arise from overfeeding, too sudden change of diet, impure water, exposure to cold or damp, or unwholesome food. Turning young cattle (about two years old) out on to grass, or oat stubble, in wet autumns, is a fruitful cause of the disease.

Symptoms.—Purging and straining to evacuate fæces, which is usually liquid and of a dark colour, mixed with mucus. There is rapid loss of appetite which soon causes great weakness.

Treatment.—This must in a great measure depend upon the cause, which should be diligently sought for; this found, a cure will be comparatively easy, provided the animal is not what is commonly termed a "Piner" or "Waster" (*see* page 149). Place the patient in a well-littered stall and keep warmly clothed; also give a dose of the "Red Drench," either in gruel or a pint of linseed oil; this will allay feverishness and be the means of cleansing the bowels of all irritating matter. Repeat the dose if the bowels still remain uncleansed, and then follow on with the "Gaseous Fluid" twice daily in cold wheat-flour gruel. An occasional dose of the "Curdolix" will be found of great benefit in some

of the severer forms of diarrhœa, and should the animal be in great pain and debilitated, a dose of the "Gaseodyne" may be added to it and given every four hours. The diet must be light and dry in character, and later on, when giving cake, see that it is unadulterated and contains no mustard; also be particular about the purity of the drinking water, which should be withheld as much as possible during treatment. Occasionally there occur outbreaks of Anæmia and Diarrhœa in young cattle, in which certain Round Worms are the chief factors; but—on the other hand there can be no doubt that Parasitic Diarrhœa and wasting, in which worms can only be detected in the excreta with a hand-lens, is more common than is generally suspected. Such cases do not yield to the ordinary astringent treatment, and efforts must be directed to expelling the parasites in the digestive canal with the "Broncholine," and the maintenance of the patient's strength by a course of "Kossolian" and good food.

N.B.—*See also* under Piners, page 149.

DIARRHŒA, SCOUR, WHITE-SKIT, OR CURDING IN CALVES.

Causes.—Milk that is too rich, or difficult of digestion from its poorness; too copious feeding after prolonged abstinence; alteration in the milk of the cow produced by disease or bad food or water, and artificial food of improper quality or excessive quantity. Calves that have stood in a fair or market, that have been carried long distances by road or rail and are hungry on arrival, frequently scour on account of being previously heavily fed, instead of being supplied with a small quantity of milk at a time, until the stomach has regained its normal tone. In some cases of "White Skit" it is undoubtedly bacterial in origin, and when this is the case it is highly infectious.

Symptoms.—The passing of white, or yellowish-white excreta of a very foetid odour. In Scour due to indigestion, the appetite is irregular or in abeyance, the abdomen hard and swollen, the skin looks unthrifty, and griping of a more or less severe character occurs. The patient grinds his teeth, loses flesh rapidly, and is sometimes too weak to stand.

Treatment.—The treatment of Diarrhœa in these young animals is often difficult, as they do not stand medicine as well as adults. If possible the stockowner *should ascertain the cause* of the trouble and completely isolate the affected calves. If the weakness be not too great, and it is suspected that the Scour is a result of the presence of some irritant substance in the intestinal canal, such as “Curd,” it is *always* advisable to administer a mild laxative, such as the “Balsamic Castor Oil,”* and if great pain is manifested a small dose of the “Gaseodyne” may be added to same. Keep the patient on linseed or oatmeal gruel for a few days.

In cases where great weakness is noticed the Diarrhœa must be checked as quickly as possible by the “Curdolix,” repeated at suitable intervals until the desired effect is produced. For the every-day or simple forms of Scour or Diarrhœa, the “Gaseous Fluid” will be found all that is necessary, if used as directed—either in gruel, or a little linseed oil. It is sometimes advisable to give the mother of the affected animal a little of the “Red Drench,” especially if her milk is considered too rich, but in case the milk is not rich enough she should be fed well both as regards quantity and quality of food. If the cow is being fed on decorticated cotton cake or some other highly nitrogenized foods, this should be stopped for a few weeks both before and after calving, feeding principally on bran and brewers’ grains, etc.

For Calves that have been recently “dropped” and scour afterwards, give a dose of the “Balsamic Castor Oil” (warmed), into which stir up a dose of the “Curdolix,” and give this in a pint of warm milk and repeat with or without the “Oil” if necessary, according to the state of the bowels.

Prevention.—All cow-houses and calf-houses should be thoroughly disinfected at least once a week, using “Globe” Disinfectant, and the strength of all weakly calves kept up by occasional doses of the “Gaseous Fluid.”

Healthy calves should not be fed or housed with those that are diseased, and it may be taken as a general rule that skimmed or separated milk should not be given until the calf is four weeks old. The change from new to separated milk must be *gradual*.

* When feverish symptoms are present substitute a small dose of the “Red Drench.”

DISHORNING CATTLE.

The advantages claimed by advocates of dishorning are, that it renders cattle quieter to handle, and, there being no danger of them inflicting wounds on each other, they can be placed in yards and fed together, and as a consequence the milk supply is increased.

Treatment.—This is best done when the calf is from three to five days old, by means of a stick of Caustic (as illustrated), but before applying it, clip the hair from the part and wash with soap and warm water. After thoroughly drying with a cloth or towel, moisten the uncovered end of



Fig. 61. Case for holding Caustic Stick.

Caustic, and rub it on the buttons or little points (which can be felt on calf's head), first one and then the other alternately. Rub in the Caustic about three times to each button, but be careful not to rub it *outside the horny part*.

If dishorning is to be done to a calf three or four weeks old the Caustic will be of no use, it being better to employ a sharp knife, and apply the Caustic afterwards in order to arrest the bleeding.

Avoid calves being out in the rain for a few days after the operation.

DRIBBLING OR QUIDDING.

Cause.—This may indicate Blain, Actinomycosis, diseased teeth, or sub-acute indigestion, and if the latter, careful dieting is essential.

Symptoms.—In the majority of these cases the animal is more or less unthrifty, it having a staring coat, and a tucked-up appearance.

Treatment.—This must depend upon the cause, but as a rule a dose of the "Red Drench" in a quart of warm ale and repeated on the fourth day, soon puts matters right. Give a light diet, and on the fifth day commence adding a few doses of the "Kossolian Blood Salt" to the food, night and morning. Give linseed cake; but a very few roots to start with. (*See also Loss of Cud*, page 143.)

DRYING-OFF COWS.

On this important subject we cannot do better than give a short extract from one of the leading agricultural papers:—

“Ninety per cent. of the spoiled udders are destroyed by bad management in drying-off cows at the close of the milking season. When they are giving so little milk that it is not deemed advisable to milk regularly to save it, they are *pretty apt to be neglected, and to go so long between milkings as to induce inflammation in one or more quarters of the udder*, and when inflammation is once established, it is a somewhat difficult matter to counteract it. The milk thickens in the reservoirs of the udder, and as the curd cannot pass out through the small tubes leading into the teats, it remains there to irritate and keep up inflammation until the part of the udder involved is spoiled beyond remedy. . . . Inflammation to any extent ought to be prevented, if possible, for if it is not severe enough to ruin any part of the udder, it always impairs the activity of the inflamed part for the following season. Better by far to keep on milking until the next calf is dropped than to allow any feverishness or swelling of the udder to occur from an accumulation of retained milk.”

Treatment.—With some cows great difficulty is often experienced in drying them off without doing serious injury to the system, and when this is the case the following treatment is most serviceable, viz.: Tie the cow up in a shed or cool loose-box, and commence by giving a “Red Drench,” then in a day or two afterwards give a “Drying Drench,” in about a pint of tepid water or a quart of cold skim milk, and repeat as directed. Keep her on a low dry diet that contains very little milk-forming properties, and milk once daily for about a week, and then on alternate days and so on according to the diminution in the supply. The drying-off of cows is often facilitated by gently rubbing into the udder a small quantity of good vinegar.

Great care must be taken in stripping the udder of every drop of milk, for if this is not done Garget or Hard Quarters will be the result. Immediately signs of Garget are seen give a few doses of the “Vetalenta” and gently rub in a little of the “Udder Salve” as directed.

DYSENTERY OR BLOODY FLUX.

Causes.—As a rule this either arises from badly treated cases of Diarrhœa, eating coarse food grown on undrained pastures, or it may be a symptom of Tuberculosis.

Symptoms.—A continual and obstinate purging with griping pains. The fæces are mixed with blood, and sometimes there are coagulated jelly-like masses adhering to them having an offensive smell. The animal rapidly loses flesh, the coat stares and the eyes are dull.

Treatment.—Clothe warmly and place the patient in a comfortable and well-ventilated stall free from draught. The bowels must be at once acted upon by giving a pint and a half of fresh linseed oil, to which add a dose of the "Gaseodyne" so as to remove all irritating matter from them and relieve pain. This done, follow on with the "Gaseodyne" in cold wheat flour gruel every four hours. Inject up the rectum by means of the Clyster Syringe some oatmeal gruel made lukewarm, and repeat if necessary. Feed on gruel made of oatmeal and linseed, to which add four ounces of starch and a dose of the "Vetamenta." In order to check the feverish symptoms give milk and linseed jelly to drink, two or three times daily. Continuous hot-water cloths applied to the abdomen should be resorted to, after which carefully dry, and then rub in gently a little of the "Chemical Extract" once daily. Keep the animal as quiet as possible and with convalescence *gradually* return to the usual diet. A few doses of the "Gaseous Fluid" in some ale or stout will be necessary later on, to restore tone to the intestinal tract and system generally.

DYSENTERY OR BLOOD IN THE DUNG OF CALVES.

Causes.—This often arises from forcing these animals on too rapidly, especially when Calf Foods are employed.

Treatment.—Commence by giving one or two doses of the "Balsamic Castor Oil" so as to remove all irritating matter from the stomach and intestines; this done, give the "Curdolix" * two or three times daily. Keep the

* A customer writes :—"We have great difficulty in rearing calves, for when about a month old they commence to scour and this rapidly turns to blood in the fæces, and everything goes through them like water. We have lost several from this dangerous disease." We advised "Curdolix" as directed, drinking water to be thickened with oatmeal, and stalls to be cleansed and disinfected with "Globe" Disinfectant. They made a rapid recovery and no further losses ensued.

patient warm, and only feed on light nutritious gruels for several days. In a week's time give small doses of the "Gaseous Fluid" so as to give strength to the bowels and system generally.

ENEMAS, INJECTIONS OR CLYSTERS.

The above are used for various purposes, viz. :—

1. For emptying the bowels.
2. For killing or expelling worms located in the rectum and large intestines.
3. For restraining diarrhœa.
4. For nourishing the body when food cannot be given by the mouth.

1. **For Emptying the Bowels.** When the nature and progress of a disease necessitate a quick evacuation of the bowels, an enema of warm water is employed, the quantity being about one gallon, to which may be added half a pound of soft soap. The water, or any other fluid used, should be a little above the temperature of the body, say 105 degrees Fahrenheit, and the best instrument to employ is the "Simplex" Clyster Syringe (*see* Price List). The nozzle of the syringe should always be oiled or smeared with soap or vaseline, and the fluid injected *slowly*, taking care not to frighten the animal in so doing.

2. **For Expelling Worms.**—For this purpose the enema is composed of oil, to which a full dose of the "Red Worm Mixture" should be added.

3. **For Restraining Diarrhœa.**—To a quart of oatmeal gruel add a full dose of the "Gaseodyne" or "Curdo-lix," and repeat according to the severity of the case.

4. **For Nourishing the Body.**—Gruel is generally the agent employed, but in very debilitating diseases great benefit will be derived if the "Cod Liver Oil Powder" is used two or three times daily as a drench, by the addition of water. When a beast cannot be persuaded to take food, fever is generally present, so give an enema of one quart of oatmeal gruel, to which add one or two wineglassfuls of the "Alcoholic Ether." Eggs or brandy can be added with great benefit, in certain cases.

EVERSION OF THE WOMB, FALLING-OUT OF THE CALF-BED, OR COMING OUT OF THE WOMB, Etc.

Causes.—This is generally attributed to violence during parturition, or to want of care in the removal of the after-birth. Pain during, or rather after, the expulsion of the foetus is another cause. Cows, ewes, and sows are the most likely animals to be affected.

Symptoms.—The womb hangs down from the vagina as a large red bleeding bag, this usually taking place after parturition—although it may take place within three or four days previous to this event.

Treatment.—Place a quantity of litter or pieces of turf under the hind feet, so that the hind-quarters stand higher than the front. Wash the bag with luke-warm water and milk, so as to thoroughly remove all dirt, etc., and then have the uterus supported on a soft linen cloth held by two men. This done the operator with hands and arms anointed with the “Antiseptic Dressing” must carefully return the mass to its proper place, working it in at the vagina. Following this inject into the womb six or seven quarts of luke-warm water, containing a small quantity of the “Globe” Disinfectant, which not only acts as a good antiseptic but tends to contract the organs. Afterwards place a truss on the cow in order to keep the uterus in place, or secure the labia or lips with a West’s Clamp, and give a full

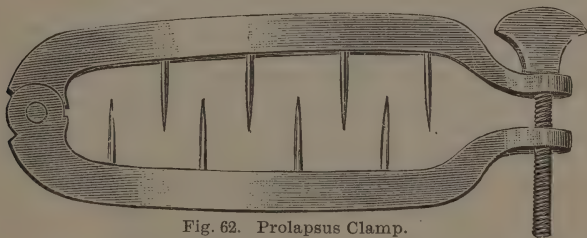


Fig. 62. Prolapsus Clamp.

dose of the “Gaseodyne” either in gruel or linseed oil, in order to quiet the nervous system. See that the cow is kept quiet and fed on a light diet, such as warm mash, gruel, etc. Repeat the “Gaseodyne” twice daily in the event of the pains continuing, and let the patient be well

watched, as she may evert the uterus again if the truss becomes twisted, or if she gets her hind quarters off the inclined plane. An occasional dose of the "Vetamenta" will do good by reducing all feverish symptoms.

FARDEL-BOUND, MAW BOUND, DRY MURRAIN, OR SWELLING OF THE STOMACH WITH FOOD.

Cause.—This condition is commonly associated with stall-feeding during the Spring and Autumn, and arises from improper dieting, such as a too-plentiful supply of oats, oatmeal, corn stalks, potatoes, turnips, etc. Impaction of the stomach is seen largely abroad during the dry season; for at this time there is very little green food, which is a cow's natural aperient.

Symptoms.—Fulness of the rumen, which feels firm or doughy on pressure on the left side; (with Hoven the sound is drum-like). The animal grunts if pressure be applied behind the shoulders, refuses food, and there is usually cessation of rumination. On post mortem examination spaces between the "leaves" of the stomach (*Omasum*) are found to be packed with dry food, and when removed a layer of epithelium often comes away from the mucous membrane.

Treatment.—The bowels must be acted upon at once by a double dose of the "Red Drench," given every six or eight hours in either a couple of quarts of gruel or a pint of linseed or castor oil. Sometimes it is advisable to inject two quarts of tepid water by means of the "Simplex" Clyster Syringe* in addition to giving the "Red Drench." As regards diet give small quantities of dry hay, cabbage leaves, or rough oat sheaf, so as to encourage the action of the stomach, and as a drink give plenty of cold water or bran tea. When the impaction has been overcome, follow on with a few doses of the "Gaseous Fluid," so as to give strength to the stomach and intestines. In cases of immediate danger the rumen must be cut open (on the left side) and the food removed; but this had better be performed by a competent Veterinary Surgeon, as it is rather a risky proceeding to the uninitiated.

* A "Simplex" Clyster Syringe should be kept on every dairy farm. It often means the saving of a valuable animal.

FEEDING MILKING COWS, CALVES, Etc.

Opinions vary considerably on this subject, for, naturally it must depend largely upon the food available on the farm at the various seasons of the year, and as to the requirements of the animal. For milking cows, however, put her on the best feeding pastures till say the first week in September; then on some good aftermath, where she will continue to thrive with the addition of a little sound hay till November. After this bring her into the stall until the Christmas sales. When in the stall give plenty of hay; a gallon of bean meal, six or seven pounds of mixed cotton and linseed cake, and about six gallons of swedes or mangolds, the latter according to the condition of the bowels. Many farmers give about equal quantities of cut hay and straw, and as the animals advance in condition the former is increased at the expense of the latter. This cut fodder or chaff should, of course, be moistened with about the same quantity of roots, which for economy's sake should be pulped, this making choking an impossibility.

As to drinking water, give as much as she will drink, to which may be added a little "Vetamenta," should she appear at all feverish. Change the bed night and morning, and do not let her be disturbed more than is necessary. It is half the battle to obtain the services of a good milkman, for this makes all the difference to the yield of milk. Let the milkings be at a stated or regular time, and never let any milk remain in the bag, otherwise Garget will be likely to occur. Do not milk within three months of calving, and as soon as the cold weather commences bring the cow in at night and give some good hay, swedes, and a small quantity of scalded bran, to which add a pound or two of cake. A packet of the "Red Drench" before and after calving will render the cow free from Milk Fever, or Dropping after Calving. (See page 144.)

Calves do much better if kept in stalls by themselves and fed separately; for if herded together they invariably suck one another, and this seriously interferes with their growth and causes indigestion, etc. Too great a stress cannot be laid upon the importance of cleanliness, and all pails, troughs, and other utensils should be periodically disinfected with the "Globe" Disinfectant. Never allow food that has not been consumed to remain in the manger, for it quickly decomposes.

FLATULENT COLIC OR SPASM.

Causes.—This is usually due to Indigestion, causing flatulency or swelling of the stomach with wind.

Symptoms.—These are very similar to Hoven or Blown, but there is not so much enlargement of the belly on the right side, and the spasms are not so continuous. The animal moans and strikes at the stomach with the hind feet.

Treatment.—Give three-quarters of a pint of linseed or castor oil, to which add one to two doses of the "Gaseodyne" according to the severity of the attack. If this does not relieve the Colic in about half an hour, repeat the "Gaseodyne" in some warm gruel. An enema of warm, soapy water is often useful, also a smart application of the "Chemical Extract" to the belly. Give gentle exercise, and only soft foods, such as mashes and gruels, must be allowed for several days. The after-treatment consists in toning up the digestive organs with small and repeated doses of the "Kossolian Blood Salt" sprinkled amongst the food.

FLUKE OR LIVER ROT.

Cattle do not suffer nearly so severely from this complaint as sheep, owing to the fact that they do not feed so close to the ground, thus avoiding to a great extent picking up the fluke-eggs. Again, their livers being much larger, they can withstand the ravages of this parasite better.

Symptoms.—These are about the same as those described under Sheep (page 184) but as a rule Diarrhoea is more severe. The flukes have male and female organs in one body and are generated from little eggs which are very minute, being about $\frac{1}{150}$ part of an inch long. It has been said that as many as 200 flukes have been found in one liver. Fluke generally makes its appearance during the months of August, September, and October.

Treatment.—This is similar to that prescribed for under Sheep, and the "Salodyne" is strongly recommended given as directed. Fortify the system as much as possible by giving good food sprinkled freely with the "Kossolian Blood Salt."

FOOT AND MOUTH DISEASE.

Causes.—Foot and Mouth Disease is most contagious and infectious, but quickly responds to curative treatment, if resorted to at the outset. It is nearly always attributable to contagion, and this can be readily conveyed in the clothes of persons who have been in contact with diseased animals. It affects Sheep and Pigs as well as Cattle.

Symptoms.—The first symptoms are pain and acute lameness, which is followed by a free discharge of stringy saliva, which produces a peculiar “smacking” noise of the lips. The patient looks dull, the back is arched and appetite becomes impaired. In a few hours vesicles appear on the

THE USUAL LOCATION OF THE DISEASE.

Fig. 63.



The Palate.



The Tongue.



The Hoof.

inside top lip, on the upper part of tongue, and on the palate, also on the teats, and between the claws. The incubative period varies from one to four days, and in ordinary cases the duration of this attack is about a week.

Treatment.—Coax the animal to feed on soft food such as grass, pulped roots, mashies of bran, and linseed or thick gruel. A little fine meal placed in the feeding trough will often induce the affected animals to lick without increasing the irritation of the mouth. No attempt must be made to drench the animal by opening the mouth, unless the fever is very high; all that is necessary is to put about a bottle of the “Vetamenta” into the drinking water daily, and

repeat this two or three times until the fever has abated. The "Globe" Disinfectant will be found invaluable for dressing the feet and keeping them cool and clean, and the "Alumine" is strongly recommended to be applied to all sores on the mouth, teats, etc. Later on give an occasional "Red Drench" in milk or gruel, but if debility is well marked the "Gaseous Fluid" must be given twice daily for several days instead. Bleeding must on no account be adopted, neither should the milk of an affected animal be given to others unless it has been well boiled.

Prevention.—For a cow to get Foot and Mouth disease a condition of what is called "receptivity" is absolutely necessary, so that provided an animal be healthy and the blood pure, the chances of escape are decidedly increased. For this reason, then, give a dose of the "Kossolian Blood Salt" twice a week to the unaffected during the prevalence of the above disease, and freely disinfect all stalls, etc., with the "Globe" Disinfectant.

FOUL, LOO, OR LOW IN THE FOOT.

Cause.—This affection is similar to Foot Rot in Sheep, and is mostly seen in stall-fed animals kept standing on dirty bedding, or in those located on low marshy lands. Impure blood will also cause this condition.

Symptoms.—As a rule there is acute lameness, and the foot is swollen around the top of the hoof, with an offensive discharge of matter from the cleft. Abscesses or ulcers frequently form if prompt treatment is not resorted to, and, naturally, curative treatment becomes all the more troublesome. Foul usually affects the hind feet; although we have known many instances where the front ones have been the only ones implicated.

Treatment.—Remove the animal to a thoroughly dry clean box or stall, and having washed all dirt or irritating matter from the hoof with cold water, to which a small quantity of the "Globe" Disinfectant has been added, dry with a cloth and then dress the part with either the "Azodyne" or "Foot Rot Oil," as directed. These preparations are best placed on a pledget of tow, and then inserted between the cleft, the application being held in position by means of a

bandage put round the top of the foot, and between the claws in a figure of 8 fashion. This gives great support to the foot and joint. In a couple of days after this treatment has been resorted to, the cow will be found standing much better, and in four or five days later, the lameness is usually gone altogether. Should the part be much inflamed or ulcerated, it is best to apply several poultices of bran and cold water (to which about a tablespoonful of the "Globe" Disinfectant has been added) previous to using either of the above preparations, so as to subdue the inflammation, etc. The poultice may be kept in place by a stout linen cloth having two holes in it to allow the claws to pass through. Let the animal remain on dry ground until a cure is effected, and if at all feverish give a dose of the "Red Drench" occasionally, with a rather light and laxative diet. When a case is suspected to be due to impure blood a course of the "Kossolian Blood Salt" is strongly advised.

GARGET, MAMMITIS, OR HARD UDDER.

Causes.—This occasionally follows cold or damp, and is frequently seen amongst young cows in high condition that have been badly milked or have some obstruction in the teats. Garget is largely seen amongst grazing cattle during extremely hot, dry weather, especially when the Warble Fly is about, as this makes the animals gallop about and then plunge into ponds, etc. It is also produced from what is termed "Over-stocking" or from drying-off cows too hastily and without proper attention.

Symptoms.—The animal shows signs of lameness in one or both hind limbs, and refuses to suckle her young. One of the teats or quarters becomes red, swollen, and hard to the touch, the breathing becomes hurried, and loss of appetite with constipation soon follows. With feverishness the milk soon diminishes. The milk not being removed keeps



Fig. 64. A case of "Hard Udder."

up inflammatory action, which either results in a defined abscess, or the udder becomes firm, hard, and knotty. When a comparatively painless, hard lump or lumps appear in one or more of the quarters, without any of the previous symptoms of inflammation which precede the ordinary course of induration, Tuberculosis of the udder may be suspected, and measures should be taken to get the suspicion confirmed by consulting a qualified Veterinary Surgeon.

Treatment.—Give one or two doses of the “Red Drench,” according to the severity of the attack, in a quart of gruel and a pound of treacle, for half-measures are of no use, and repeat with half-packet doses; but should shivering set in, give a dose or two of “Alcoholic Ether” last thing at night. Foment the udder with warm water three or four times daily, afterwards drying with a soft linen cloth. After fomenting with the warm water it is a good plan to finish off with cold, so as to close the pores of the skin; this done gently apply the “Chemical Extract” or “Udder Salve” to the affected part, morning and evening. If an abscess has formed and does not burst, make a free incision with a lancet or sharp clean knife at its lowest part, so as to allow of free drainage, and apply a warm poultice of linseed meal and bran, placed in a broad piece of cloth or bandage having holes cut to let out the teats. After this treat as an ordinary wound with the “Chemical Extract.” In some cases of Garget the teat passage gets blocked up with pus-like materials or granulations to such an extent that it becomes necessary to get these away, and for this purpose the best plan is to introduce a Teat Syphon, which will soon clear the passage.

If at hand the “Vetalenta”* is equally efficacious in combating the fever, or checking chills, etc. (these being the forerunners of all udder disorders); but it must be given every three or four hours as directed.

Allow small quantities of sweet hay, with a little bran, and diminish the supply of water. All stimulating or milk-forcing food should be avoided, and with convalescence, give better food and half-bottle doses of the “Gaseous Fluid” once or twice daily.

* Mr. A. W. James, Blandford, writes :—“I consider your ‘Vetalenta’ to be the finest medicine for checking Chills and Inflammatory disorders I have ever used.”

Prevention.—When a cow in milk gets wet or is shivery a dose of the “Vetamenta” and a smart application of the “Chemical Extract” to the loins will undoubtedly ward off udder complaints.

GARGET OR MAMMITIS (MALIGNANT).

Cause.—This is always due to contagion, septic organisms (*Streptocarpi*) being conveyed from the diseased to the healthy udder by the milker’s hands from want of cleanliness and disinfection. When an animal lies down on a dirty floor the open teats are very liable to be invaded by these bacteria. Infected milk dropping on the floor and decomposing is also a fruitful source of spreading the infection. Contagious Mammitis is very prevalent in Australia, especially on Dairy Farms.

Symptoms.—These are similar to those under ordinary Garget, the disease commencing in the teats and extending into the milk ducts, but as a rule the temperature runs higher, 107° being quite common. Generally an offensive Diarrhoea is present, and the milk diminishes in quantity, becomes bluish in colour and fibrous in character. Soon after this a nodule of hardened tissue forms, which enlarges, and in a short time others appear. Unless active measures are taken, pus forms in the quarter, and serious losses follow.

Treatment.—Immediately a quarter becomes hot, tender or hard, it must be fomented frequently with hot water, and then finish off with a little cold water for about five minutes. Having dried with a soft cloth, apply either the “Udder Salve,” or “White Chemical Extract,” night and morning. In bad cases where the udder has become hard, inflamed or even gangrenous, draw off the watery or curdled material frequently by the Teat Syphon, and then inject up the teat, by means of the “Milk Fever Syringe” a solution of “Sanosol” (one tablet to one quart of warm water) and repeat twice daily. After this has been forced up the teat leave it there for several minutes, and then milk it out again. After each injection rub in gently either of the above preparations, which will afford relief by allowing the skin to stretch, and will at the same time heal up any sores that may be present. In all cases of Mammitis (whether Septic

or otherwise) the "Vetamenta" will be found of the greatest benefit for lowering temperature and cooling the system. Sometimes in order to let out the pus or cheesy material, the teat has to be split open by a Bistoury. It is of the utmost importance that the milker's hands should be carefully washed in a weak solution of the "Globe" Disinfectant between each milking, and that the udder be kept clean. Diseased animals should be milked last or have a separate attendant, and the milk obtained from them destroyed, and so as to ensure the avoidance of further infection milk into a tin containing a good proportion of the "Globe" Disinfectant. If this simple method is adopted the milk will be rendered perfectly harmless. All milking tubes and instruments must be sterilized by dipping them in a hot solution of the above Disinfectant.

HAIR-BALLS IN CALVES.

Cause.—Hair-balls are often found in the true stomachs of calves and lambs and arise from acidity of this organ, causing the young animal to lick himself or his dam. The hairs thus licked are swallowed and collect in hard roundish balls by the churning action of the stomach. These are found in various parts of the intestines, and as many as fifteen, from three to six inches in diameter, have been found in the paunch. The giving of unstrained milk is another cause.

Symptoms.—Frequent attacks of Hoven or Blown after feeding, general want of condition, depraved appetite, and sometimes Diarrhoea.

Treatment.—Commence by giving a dose of the "Red Drench" in a pint of Linseed Oil, and repeat on the third or fourth day; also feed on a light and laxative diet for a short time. In certain cases it is sometimes possible to detect the disorder before the Hair-ball has attained large dimensions; in such instances we specially recommend "Solvax." This preparation arrests the further formation of the ball (be it either curd or wool), and in addition neutralizes all acidity, thereby preventing Scour or Diarrhoea setting in.

In severe cases when the Hair-ball has been allowed to attain full dimensions, the only plan is either to cut the animal open and secure the offending ball or to turn him into veal.

HIDE-BOUND.

This is usually a sign of ill-health, and denotes a staring coat, due to the erection of hairs as a result of lost nervous energy.

Treatment.—The bowels and system generally must be well cleansed by a packet of "Red Drench," to which half a pound of Epsom Salts can be added, the whole to be given in three quarts of warm gruel and treacle. This dose should be repeated on the fourth day, but without the Salts. Meanwhile, let the diet be light and laxative. On the fifth day gradually return to the usual mode of dieting, and give half-bottle doses of the "Gaseous Fluid" in a pint of warm ale, twice daily, for a few days; then once daily, and so on as an improvement is noticed. Allow rock salt in the manger.

HOVEN OR BLOWN.

Cause.—This distended condition of the rumen is invariably brought about by improper feeding, such as eating wet or luxuriant clover, rape, frosted or rotten turnips, which cause active fermentation and the production of gas.

Symptoms.—These are easy of recognition. The beast appears uncomfortable, and the stomach swells considerably on the left side, which when struck, sounds like a drum. A quantity of saliva flows from the mouth, and the animal gasps for breath.

Treatment.—This does not present any difficulty, provided the proper medicine be at hand; but many a valuable animal has succumbed for the want of this simple precaution. Let the belly be well rubbed, and give *at once* a dose of the "Gaseous Fluid" in a pint of Linseed Oil. Repeat the dose in ten or fifteen minutes if relief is not obtained, and see that the animal is kept walking about. Feed on a light diet for several days afterwards, and keep the bowels free by doses of the "Red Drench." In desperate cases where suffocation seems inevitable, either the Probang or Stomach Pump can be passed down the gullet into the stomach to give relief, or a long-bladed knife plunged into this organ at the point marked C in the illustration. The Trocar and Canula is, however, the best and safest appliance to use.

To Puncture the Rumen.—A point is selected about midway between the projection of the hip-bone and last rib, and, having made an incision with a penknife, thrust the Trocar

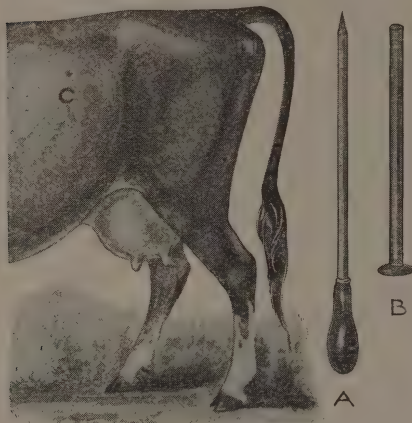


Fig. 65. Hoven or Blown.

A. Trocar. B. Canula.
C. Where to puncture the Rumen.

with Canula attached into the rumen. Withdraw the Trocar and leave the Canula behind so that the gas may gain an exit, and from time to time reintroduce the Trocar in order to clear away any portion of food that may be blocking up the passage. When the gas ceases to pass out, withdraw the Canula, and anoint the incision with a little of the "Chemical Extract" to ensure proper healing.

Hoven frequently affects young calves through drinking too

fast when being weaned with the pail, and in order to prevent this only allow small quantities of good milk at frequent intervals, to which add a little "Gaseous Fluid."

Chronic Cases of Hoven or Blown, unless arising from Hair-balls or other foreign bodies sometimes found in the intestines, may soon be overcome by a little careful dieting and a few half-bottle doses of the "Gaseous Fluid," especially if given in a little old ale or stout, for by this method tone and strength are rapidly restored to the entire intestinal tract. Give food of a light and laxative character, little and often, and sprinkle it with the "Kossolian Blood Salt," as directed. Allow water before meals, or better still, provide a trough from which the cow can drink at will, provided the Hoven is not due to imbibing too much liquid. Lousiness is frequently associated with cases of Hoven, and when this happens it should be treated at once, as it is most debilitating.

HOW TO DRENCH A COW.

The "Eclipse" Drenching Bottle should always be employed in administering medicine to cattle, and the great point in the operation is to avoid exciting the patient unduly. Drenching should be done from the right side. Either seize hold of the nostrils, as depicted in drawing, or of the upper



Fig. 66. Showing proper position for Drenching a Cow.

jaw by passing the left hand over the head, bending the latter well round to the right. The operator should place his back well against the animal's shoulder, and if the patient is at all awkward let her be placed with her left side against a wall or fence. The head being elevated, pour the medicine *gently* down the throat so that it trickles, as it were, into the stomach. It is advisable to obtain the services of another man to hold the animal's horns in order to prevent struggling.

HUSK, HOOSE, OR PARASITIC COUGH IN CALVES.

It has been remarked by an eminent helminthologist, "that if parasites were 'fair feeders' their presence would not be so serious," for they do not take the food as it is swallowed, *but live upon the very essence and juices of the body which digestion has prepared.* Hence it is that these parasites rapidly undermine the strength of young animals requiring so much nutrition. If mature animals were equally affected they would not be so soon robbed of health and strength, as it is a physiological law that with the young of all animals absorption is more rapid and fasting more detrimental. *Let it be the rule then that the first day young stock appear to lose, rather than gain in growth and condition, to carefully examine them and ascertain, if possible, what is amiss.*

Every season of the year brings its special diseases arising from the presence of parasites, and in some years, owing to the specially favourable climatic conditions for parasitic growths, the losses are far greater than usual; but there are two parasitic diseases of which it may be said that "like the poor they are always with us," and these are Husk and Hoose, and Tape Worm disease.

Causes.—An essential to the prevention of any disease, and in like manner to its cure, is a knowledge of its cause, and in the case of a parasitic disease some acquaintance with the habits and life history of the parasite is necessary, in order that it may be attacked at the point of its least resistance. Parasitic Husk or Hoose generally owes its origin to placing calves out to grass during August and September; but it can be contracted at any time of the year.

The disease is due to small thread-like worms (*Strongylus micrurus*) finding their way into the trachea or windpipe and bronchial tubes of the lungs. These strongyles, or parasites, are whitish in colour and vary from $1\frac{1}{4}$ to $2\frac{1}{4}$ inches in length, and by their constant movement produce irritation and set up inflammatory action, causing the animal to give out that half-choking, half-gasping cough which is so diagnostic. Veterinary science has not yet determined the complete life history of these worms; but it is generally understood that they breed and develop in moist pastures and marshy places. The opinion generally held is that the para-

sites are taken into the stomach with the food, and that the minute embryos pass from the intestines through the villi into the blood circulation, and in this way are conveyed to the lungs. Parasitic Husk is often complicated by the presence of other worms, such as the *Strongylus contortus*, which infests the lining membrane of the fourth stomach and bowels, and sets up an exhaustive Diarrhœa or Scour.

Symptoms.—The cough is a peculiar one, being short, husky and tickling, this becoming more pronounced as the worms increase in numbers.

Panting and distress are observable, there is a thick discharge from the nose, and in the masses of mucus expelled during the act of coughing *numerous worms and embryos are found. This is the true diagnostic test of the disease*. As the symptoms become more acute, even though the appetite may remain good, the animal soon loses flesh and has a starved appearance, and invariably suffers from Diarrhœa.

Treatment.—Separate at once all visibly affected animals, even those with a *slight cough*, and place them on a dry porous pasture if practicable; also see that they are comfortably housed at night, and left without food. Next morning drench them with the “Broncholine” on an empty stomach, and let them fast for two hours afterwards. Repeat the dose in the same way on the second and third mornings, for if the disease is treated in this way the parasite (not being fully developed) is more easily destroyed, and there is less debility to contend against. *If the disease has obtained a strong hold of the animal, it will be necessary to give the “Broncholine” once, or even twice daily, for a week, and by the end of that time it may be safely expected that the strongyles are destroyed.*

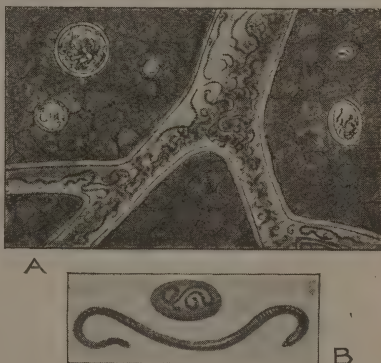


Fig. 67.

- A. Portion of Lung, showing the air passages almost choked up with worms, in various stages of growth.
- B. Lung Worm, with egg containing young worm.

When the "Broncholine" reaches the stomach and alimentary canal it not only destroys any embryos, or fully developed worms lurking about in these regions, but being rapidly absorbed by the blood, its vapour soon gets inhaled from the mucous membranes of the bronchial tubes by the breathing of the animal, and this means suffocation to the strongyles. In drenching never hold the head on one side, but in a horizontal position.

As regards diet, it is most important to support the system of the affected animals by liberally feeding on the most nutritious food, such as plenty of linseed jelly and cake, gruels, bruised oats, peas, and a few swedes with some clean sweet hay. See that a lump of rock salt is within reach, so that the animals can lick at will.

Prevention.—For many years stockowners have been anxiously inquiring what are the best means of preventing this disease, and with this important question before us, we have given the matter our most serious attention. It is thoroughly well known to those who have investigated outbreaks of parasitic Husk or Hoose *that the weakest animals always go to the wall*, therefore it is important to keep the general condition of all calves up to the highest standard, so that they can resist the damaging effects of parasitic invasion. In order to obtain this result, practical experience tells us that all young animals (especially lambs) should be dosed at a month to six weeks old, or *immediately after weaning*, whether diseased or healthy, with a medicine such as the "Ovidyne." This preparation has a two-fold action, for it is not only destructive to the undeveloped or embryonic parasite, but is one of the finest tonics or pick-me-ups that Veterinary Science has discovered. If a few doses of the "Ovidyne" are given as directed, the animal's system can easily withstand the attacks of disease, *and it is astonishing how rapidly Calves put on weight afterwards*. It seems to give them new life and energy, and this at a small cost, seeing that they make far better prices at the market, and that all food goes to good account.

It must not be imagined when giving the "Ovidyne" or the "Broncholine," that because no worms are seen to come away from the animal, that none are present, and therefore the treatment should be discontinued, for both the "Ovidyne" and "Broncholine" kill hundreds in the intestines, which, becoming more or less digested, are not easily detected in the dung.

Prevent infected animals from drinking at the same place as healthy stock, and all calves that have died from the above complaint must be buried. As damp and moisture favour the development of the "strongyle," it is most desirable that all pastures be properly drained, and that young stock should *only be turned out when the dew is off the grass*. We strongly advise top dressings, such as lime, soot, or crushed rock salt, the latter in the proportion of half a ton to the acre, for this process means death to the larvæ of the worms, and amply repays the agriculturist by the increased fertilization of the soil. This dressing should be done in June or July, as the grass is then of less value.

(See Foot Note on previous page.)

ILL-CONDITION OR OFF-APPETITE.

Cause.—As the above conditions frequently accompany various diseases, the cause must be diligently sought for. For instance, Ill-condition may be due to Lousiness, want of proper sanitation or parasites. If Tapeworms are found in the dung they should be treated at once as on page 161.

Treatment.—It is always advisable to commence by giving a mild aperient such as the "Red Drench," and repeat same in a few days. After this follow on with the "Gaseous Fluid" in some warm ale or gruel, twice daily for two or three days then skip a day and repeat every other day and so on until cured. Give all food of the best quality in small quantities at a time, such as crushed oats, a little bran, roots and plenty of meadow hay and grass if it is procurable, as well as linseed and cotton cake. See that the drinking water is wholesome; also sprinkle all food with the "Kossolian Blood Salt," which contains tonic and sustaining properties, and rapidly improves appetite and condition. The free use of this preparation must not be viewed as an expense, but as true economy, since the forage supplied with it will produce more flesh, or in a milch cow a better yield in quality and quantity of milk. Attention should be given to thorough ventilation of the stalls, and it is important to sprinkle the floors and drains freely with the "Globe" Disinfectant. If the animal be Lousey this must be treated at once as on page 142.

INFLAMMATION OF THE WOMB AFTER DIFFICULT CALVING.

Causes.—These are exposure, over driving, undue violence during difficult parturition, or the retention of the after-birth. It takes place a few hours after calving.

Symptoms.—The animal shivers, appears to be in pain, and looks round at her sides, experiencing if touched, tenderness across the loins. Fever, with loss of milk and appetite soon follows, and the vulva looks red and swollen. There is usually straining and a foetid discharge from the uterus through the genital passage.

Treatment.—Keep the animal quiet and warmly clothed, in a comfortable airy stall away from the others, and use freely the "Globe" Disinfectant about the place. The aid of an experienced Veterinary Surgeon should always be obtained if the case is beyond the knowledge of the cow-keeper or owner, and especially so should the calving be one of "*unnatural presentation.*" The natural presentation of the calf is with the muzzle resting on the fore feet, back upwards as depicted in drawing on page 107. It is a golden rule in all cases of difficult parturition *never to interfere with the patient until all chance of natural expulsion has passed*; but when the water bag has broken and the pains have continued for some considerable time without presentation, then an examination becomes absolutely necessary. In doing this always smear the hand and arm with the "Chemical Extract" previous to insertion into the genital passage, for by this simple precaution pain and straining are quickly relieved and the sensitive parts rendered antiseptic. Carefully avoid injuring the cow, and if the operator's nails are long, pare them. In bad and painful cases, give the "Gaseodyne," as directed, every six or eight hours to compose the over-excited system, and then follow on with occasional doses of the "Red Drench" or "Vetalenta" in order to check feverish symptoms. The vagina or bearing must be cleansed by bathing with luke-warm water, and then syringe into the womb a solution of the "Globe" Disinfectant as directed; if necessary add to the mixture two or three table-spoonfuls of "Gaseodyne" where great pain is manifested. Rub the spine and loins with the "Chemical Extract" and afterwards place a cloth over them

CATTLE.

JAUNDICE OR YELLOWS.

Causes.—This is usually due to some obstruction to the passage of bile from the gall-bladder to the small intestines, such as gall stones, or want of healthy tone to the liver or bowels. Jaundice often comes on in a month or six weeks after calving, when the milk flow is at its height.

Symptoms.—These are characterized by a dirty yellow appearance of the visible mucous membranes and skin, which can be readily seen in the corner of the eye, inside the ear, or on the udder. There is generally loss of cud and milk, and a rough condition of the coat.

Treatment.—Fast the animal during the day, and next morning give a full dose of the "Red Drench," with half-a-pound of Epsom Salts in a quart of warm oatmeal gruel. Forty-eight hours afterwards give the "Liver Drench" as directed, in some warm beer, and repeat if necessary. This treatment will cleanse the system, compose the stomach and gently stimulate the sluggish liver; but should debility continue give a few doses of the "Gaseous Fluid." The diet during convalescence must consist of mashies, carrots, boiled barley, hay, and food of a succulent character. Exercise is most important, but a chill must be avoided. Clysters of warm soap and water are often of great service.

JOHNES' DISEASE,

Cause.—This disease is common to most breeds of cattle, and sometimes Sheep, but Horses and Pigs appear to be exempt. It owes its origin to a bacillus which multiplies in the walls of the intestines, and then passes out with the fæces. In the south of England it usually appears in November after cattle have been put on wet land; and it must always be remembered that affected animals are very liable to give it to others. It is asserted that the Birmingham abattoir statistics show that nearly as many carcasses are condemned for Johnes' Disease as for Tuberculosis.

Symptoms.—General unthriftiness, followed by profuse Diarrhoea and rapid wasting away, but the appetite is not much interfered with. The fæces have a frothy appearance and a very disagreeable odour, and the post mortem appearances show that the small intestines are mostly involved

Treatment.—This is rarely successful in bad or chronic cases, and the best plan is to slaughter those that are known to be affected, and thus prevent further infection. In some instances, however, particularly those that have been taken at the outset, we have found that small and repeated doses of the "Gaseous Fluid"* in gruel, made from the "Cod Liver Oil Powder," has done a lot of good in fattening for the butcher. There is no risk of contagion to man.

LICE AND NITS.

Causes.—Poor living, inattention to cleanliness or contagion. Lice invariably attack ill-conditioned animals, producing irritation, scurvy condition of the skin, and loss of hair, especially about the neck and back.

Treatment.—Separate the diseased from the healthy, and thoroughly cleanse the entire body with the "Dermoline" (a cattle wash), commencing at the face, neck, poll, root of tail, legs, etc., and then the body, using a brush for the purpose. This done, dry with a wisp of hay and apply the "Mange or Lice Wash,"† as directed. Repeat this treatment on the fourth or fifth day, so as to destroy the hatchings that may not have been killed after the first dressing.



Fig. 68.

Ox Louse
(magnified).
(*Haematopinus*
eurysternus.)

If this treatment is adopted very few lice can escape, but it is advisable not to turn the animal out for some hours afterwards unless the weather is warm. The blood being invariably impoverished, must be purified by occasional doses of the "Red Drench," given in good linseed or oatmeal gruel, this to be

followed by a few doses of the "Kossolian Blood Salt." The infected cow sheds, rubbing posts, etc., should be white-washed and disinfected with the "Globe" Disinfectant, and cleanliness must be rigidly enforced, avoiding the use of barley straw. All bedding or litter used by affected animals

* In certain cases, where a valuable animal's life is at stake, we have known rather wonderful results to follow the use of the "Special" Mixture for Johnes' Disease, which is put up in $\frac{1}{2}$ and 1 gallon Tins.

† In very bad cases the "Xemos" is preferable.

should be burned. Give better food, little and often, and avoid applying Mercurial Ointments for destroying these pests, as cattle are very liable to lick same off.

LOSS OF CUD, AND INDIGESTION.

Causes.—Loss of cud, or cessation of rumination, is in the majority of cases due to Indigestion. A certain proportion of long fodder is necessary for proper digestion in the ruminant, and when the whole of the hay or straw is finely cut into chaff, and fed with pulped roots, meal, etc., the result is loss of cud and chronic indigestion. Chaff for cattle should not be cut into lengths of less than $2\frac{1}{2}$ inches, but in addition to this it is advisable to give a daily allowance of long hay, or oat straw.

Symptoms.—The animal becomes dull and drowsy, goes off his feed, the hide clings tightly to the ribs, and a great quantity of saliva dribbles from the mouth. Sometimes the animal grunts a good deal.

Treatment.—Give a “Cud Ball” every morning before meals for four or five days, and at once change the usual mode of feeding. When, in addition to the loss of cud, the bowels are noticed to be rather confined, it is a good plan to commence with a dose of “Red Drench.” Let the food be carefully selected, and consist of a few sound roots, green food, with a small quantity of oil-cake, bran, etc. Later on sprinkle the food with a little of the “Kossolian Blood Salt” for a few mornings, so as to stimulate the digestive organs and prevent further trouble.

LOSS OF MILK.

Causes.—This may arise from various causes, but amongst the most important may be mentioned a cold or chill. Loss of milk is frequently a symptom of other diseases, such as Tuberculosis, etc.

Treatment.—Of course, if the loss of milk is due to a cold, proper treatment, as directed under this head on page 110, will soon have the desired effect; on the other hand, if due to debility or a scrofulous condition of the udder, then the best plan is to milk more frequently and allow the cow to rear her calves until she goes dry, then fatten up and sell.

MEASUREMENT OF MEDICINES.

The following information taken from Finlay Dun's book on "Veterinary Medicine" may be useful to some of our readers: "Common Tumblers contain from 8 to 10 fluid ounces; a Pint contains 20 fluid ounces; Breakfast Cups 6 to 8 ounces; Teacups about 4 to 6 fluid ounces; Wine Glasses about 2 fluid ounces; Tablespoons half a fluid ounce; Dessert spoons 2 fluid drachms; and Teaspoons 1 fluid drachm of 60 minims, or drops. Such measures, however, are only approximately correct."

APOTHECARIES' WEIGHT.

- 1 Scruple, ℥j. = 20 Grains.
 1 Drachm, ℥j. = 3 Scruples
 1 Ounce, ℥j. = 8 Drachms
 1 Pound, lbj. = 12 Ounces

CAPACITY MEASURE.

- 1 Fluid drachm = 60 Minims.
 1 Fluid ounce = 8 Fluid drachms.
 1 Pint = 20 Fluid ounces.
 1 Gallon = 8 Pints.

MILK.

Composition.	Whole Milk.	Separated Milk.
Albumen	3.58	3.9
Butter	3.73	0.8
Sugar	4.90	4.7
Salts	0.71	0.6
Water	87.08	90.0

MILK FEVER OR DROPPING AFTER CALVING.

Causes.—The origin of this disease still remains unsolved, but the most generally accepted theory is, that the condition is due to absorption into the system of poisons formed in the udder, or excitement, or shock caused by the withdrawal of all the milk at once, either before or after calving. Cows are liable to Milk Fever within the first ten days after calving, but the attack most frequently occurs within three days of that event, and some consider this to

limit the danger period. We find it affecting heavy milkers of any breed, but more particularly Ayrshires and Short-horns in summer time, especially if they have been overfed. It is seldom that a cow falls before her third calf.

Symptoms.—These cannot well be mistaken, the animal refuses her food, she wanders about, staggers, and lies down with her head turned round to the side, as depicted in draw-



Fig. 69. A case of Milk Fever. (Characteristic position.)

ing; her eyes roll with more or less complete loss of sight. The abdomen is usually distended like a drum. There is little or no appetite and no discharge of urine or dung, and sensation is completely lost, so that great care must be taken in administering medicines, or choking may follow. When the disease runs a mild course, we may hope to be successful if we adopt the following simple treatment.

Treatment.—First, a comfortable straw bed should be prepared, and the patient *prevented from lying on her side* by means of bags lightly filled with straw, chaff or sawdust, one placed on each side. Do not attempt to give any solid food, but as much thin gruel and treacle or bran mash as the beast will take. Cleanliness should be strictly observed. The “Brown Chemical Extract” should be *well* rubbed in along the spine. Remove a small quantity of milk every six to eight hours. Ice or cold water should be constantly applied

to the base of the horns, and the "Vaccoma" given as directed. In the majority of cases a cow will do well after the above treatment; but to get her into condition again give oatmeal gruel, hay, linseed cake, and the "Gaseous Fluid." Should a cow not rise in three days after having recovered consciousness, have her lifted up, and well rub her legs with the "Chemical Extract"; if she stands then, even for a minute, it is a good sign.

A new system of treating Milk Fever has been in vogue for some time now, such as injecting up each teat or quarter a reliable disinfectant such as "Sanosol," which is also deodorant and antiseptic. You merely have to take one of the tablets, dissolve it in a pint of boiled water, and inject up each teat a gill

(5 ounces) of this solution and repeat in six or eight hours' time if necessary. Gentle massage of the entire udder with the "Udder Salve" afterwards will not only relieve any painful distension, but will ensure the preparation being equally distributed throughout the gland substance. Another method is to employ the "Milk Fever Outfit" which injects into each teat atmospheric air which is filtered through medicated cotton wool, and thence through a teat-tube fitted to the apparatus. Each quarter is blown up in this manner tense and hard,

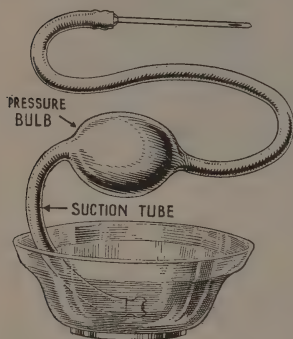


Fig. 670. Milk Fever Syringe.

and afterwards the teat is tied with a broad piece of tape which can be removed in about six hours after the operation. With whatever apparatus the operation is performed the teat-tube and fittings must be kept scrupulously clean by being scalded in boiling water both before and after use. If this simple precaution is overlooked Garget or Mammitis is very liable to supervene. Both instruments are kept in stock by us.

Prevention.—Much may be done to ward off Milk Fever if the treatment advised under "Cows before Calving" (see page 113) be carried out. All owners of pedigree stock should give a packet of "Red Drench" before and after Calving.

MILK STONES OR LUMPS IN COWS' TEATS.

There are several kinds of obstruction met with in the teats, including small masses of curdled milk, small tumours which are sometimes attached by pedicles to the mucous membrane, and what are called lacteal calculi, or Milk-Stones.

Treatment.—Any obstruction to the flow of milk should be at once removed, otherwise the cow will in all probability go dry, or inflammation set in. The character of the obstruction can usually be determined by the Milk Syphon; if it is movable, it indicates "Milk-Stones," if a tumour it cannot be pushed back and no good can be done. Milk-Stones can sometimes be extracted or pushed aside by careful manipulation of this instrument, which will also be found very useful in removing small masses of curdled milk.

In bad cases use the Papillatome, as illustrated, which is a large sized teat syphon with a cutting edge. Bathe the

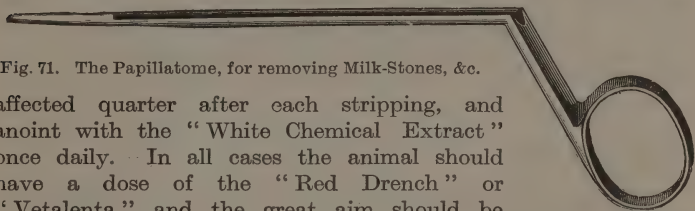


Fig. 71. The Papillatome, for removing Milk-Stones, &c.

affected quarter after each stripping, and anoint with the "White Chemical Extract" once daily. In all cases the animal should have a dose of the "Red Drench" or "Vetalenta," and the great aim should be to get all the milk away from the affected quarter by repeated strippings.

MURRAIN.

This name is given to such a variety of different disorders, that we must request our customers to give us full details as to the symptoms of the complaint, should they be requiring advice. Murrain usually denotes Foot and Mouth Disease.

NAVEL-ILL IN CALVES.

Causes.—This is a condition in which the unhealed navel has become infected, due to the entrance of micro-organisms, which often produces an abscess and constitutional disturbance. Calves often suck one another's navels, which produces practically the same condition.

Symptoms.—The navel is found to be hard, swollen and tender.

Treatment.—Tie the navel-string with a piece of string (not quite close to the belly), and place a pledget of tow dipped in the "Chemical Extract" or "Antiseptic Dressing" over the sore part. Keep this in place with a bandage round the body and change the dressing twice daily. If the part has become inflamed it is advisable to either foment with warm water daily, or poultice, provided there is no tendency to bleeding. When the swelling "points," or comes to a head, open it with a lancet, and having dressed it with either of the above, give a full dose of the "Balsamic Castor Oil," beaten up with an egg, once daily, for a few times. All sheds must be kept clean and freely disinfected with the "Globe" Disinfectant.

NOTE. — An infectious Dysentery in newly-born animals has long been recognized, and investigations on behalf of the Irish Board of Agriculture have demonstrated it to be due to a specific micro-organism, the point of entry being the Navel, which at birth is practically an open wound.

OPHTHALMIA, OR INFLAMMATION OF THE EYE.

Symptoms.—The eyelids are closed and swollen, and tears flow copiously. The conjunctiva, or membrane which covers the eye and eyelids, becomes red or inflamed, and sooner or later a cloudiness appears owing to opacity of the cornea.

Treatment.—Examine the eye carefully for any foreign body, such as "hayseeds," particles of sand, or a hair, and remove same. These foreign bodies are generally found under the upper eyelid. Place the animal in a darkened stall and tie the head up to the rack. After this apply repeated warm water fomentations, and either the special "Eye Ointment" or "Lotion" as directed. Give a dose of the "Red Drench," and a cooling and laxative diet. Should the injury not yield to this simple treatment it may be taken for granted that it is of a more serious nature, and as such, an experienced Veterinary Surgeon should be consulted at once.

PINERS, WASTERS, OR SCANTERERS.

Causes and Symptoms.—These terms are applied in different parts of the country to cattle of both sexes which pine or waste away without exhibiting any of the ordinary febrile symptoms, or loss of appetite. Diarrhœa commences immediately an animal is turned out to grass; and the milk soon begins to diminish, a feature which distinguishes this disorder from ordinary Diarrhœa. The disease is even more severe when poor animals are put on good land. More recently it has been demonstrated to be associated with well-bred cattle, in which the “mesentery” is found to be the seat of the disease, showing itself in the form of tubercular abscesses or tumours. The skin has a scurfy or hide-bound appearance.

Treatment.—Of course if one has a chronic case of a “Piner” to treat, it is only waste of time and money to attempt a cure. On the other hand, we have known cases of supposed “Piners” that have quickly responded to judicious treatment. Under these circumstances it is well worth trying the following: Keep the affected animal indoors, feed on the best quality food, little and often, giving oatmeal in all the water they drink for ten days, then if there is no fever, administer half-bottle doses of the “Gaseous Fluid”* in either gruel made of the “Cod Liver Oil Condiment,” or in some warm ale or stout, twice daily for a couple of weeks, then diminish the dose as an improvement is noticed. Sprinkle all food with a little of the “Kossolian Blood Salt” daily, and allow free ventilation. It is always a good sign if after a week’s treatment the patient is noticed to have improved in flesh and condition. Milk from affected animals should not be sold for human consumption. Four or five ounces of Lime Water* in the drinking water to each cow often does good.

PLEURISY.

This disease is comparatively rare, and when it does appear it is generally complicated with Pneumonia (*see* next page).

*To make the Lime Water take three ounces of Slaked Lime and add to it one gallon of water. Well shake and allow the undissolved matter to subside, then decant the clear solution into a closed vessel.

PNEUMONIA OR INFLAMMATION OF THE LUNGS.

Causes.—Exposure to cold winds and sudden chills.

Symptoms.—There is invariably an increase of temperature and the pulse becomes fast and weak, accompanied with quick and laborious breathing. Horns, ears and feet are cold, and as a rule the throat is sore. The patient is generally found lying down, eyes dull, has a hard short cough, and has an insatiable thirst.

Treatment.—Place the animal in a good airy loose-box and clothe with rugs or sacks about the shoulders and chest. In order to check the feverish symptoms and gently act on the bowels, give small and repeated doses of the “Red Drench,” in plenty of gruel, or the “Vetalenta,”* as directed, if the fæces are normal. Last thing at night give a dose of the “Alcoholic Ether,” and if the pain is acute, add a little “Gaseodyne.” The sides of the chest, throat, and down the windpipe must be well rubbed with the “Brown Chemical Extract,” and only soft and easily digested foods, such as mash and green food, should be given during the early stages. The cough must be treated with the “Cough Elixir” as directed, and later on, when the acute symptoms have subsided, give better food and half-bottle doses of the “Gaseous Fluid,” twice or three times daily, in some warm ale or stout.

PULSE, TEMPERATURE, AND RESPIRATION.

The Pulse.—In the Cow or Ox the best place to take the pulse is at the submaxillary artery outside the jaw, or, better still, under the root of the tail, or at the inner side of the knee.

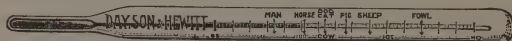


Fig. 72. Clinical Thermometer.

Temperature.—The introduction of the Clinical Thermometer now affords the most valuable diagnostic aid to the stockowner, and places him at great advantage over the old farriers of the past. These can be had at a very cheap rate,

* A customer writes that he had a bull, which cost over £40, rapidly develop Pneumonia after a railway journey; everything pointed to inflammation of the lungs. The bull was off its legs for three or four days; but after giving the “Vetalenta” five times a day and carefully nursing, it rapidly recovered.

and we thoroughly advise their use. In Cattle the temperature is best taken at the anus of the male, and at the vagina of the female. An elevation of 4 or 5 degrees may be considered serious unless it runs down again quickly, whilst a $2\frac{1}{2}$ or 3 degrees, persistently maintained, will probably indicate illness of a grave character.

The Respirations are either taken by the application of the ear, or with a stethoscope over some part of the respiratory organs such as the nose, throat, windpipe, or chest. Experience can only teach the different sounds that denote health or disease.

The table below indicates the normal condition of the Pulse, Respirations, Temperature, etc. Stockowners should recollect that the frequency of the pulse and respiration, even in repose, greatly depends upon the temperature of the air, stable, or shed, and whether before or after feeding.

	Pulse Beats per minute.	Respira- tions per minute.	Tempera- ture Degrees Fahr.	Average duration of Pregnancy.
Cattle.. ..	40-60	12-16	$101\frac{4}{5}$	285 days

Milking cows frequently have a temperature of 102 or 103 degrees without any apparent departure from health; but a temperature of 104 or 105 degrees, with a cough, should necessitate immediate treatment.

RED WATER, BLACK WATER, MOOR-ILL, OR WOOD-EVIL.

Nature and Causes.—This disease, so prevalent among cattle in many districts and so frequently fatal, is designated “Red Water,” in consequence of the peculiar colour of the urine passed by the animal, and “Black Water” because in some of the severer cases the urine becomes deeper in colour, changing from a bright red to a port wine or dirty chocolate colour. It has been reported that within a radius of three miles round Caledon, Co. Armagh, Ireland, there were 600 cases, costing about £1,500. The colour of the urine in “Red Water” is due to breaking down or disintegration of the walls

of the red corpuscles, and escape of their coloured interior, —hæmatin—which mixing with the serum of the blood, is eliminated by the kidneys. It is said that “Texas Fever” in America, and La Tristuja in the Argentine, are similar and probably identical, with “Red Water” in this country. Young animals suffer much less acutely than older animals from an attack. In this country “Red Water” is most prevalent from March to June, and during October and November.

Symptoms.—This disease is generally ushered in with Diarrhœa, this being followed by obstinate constipation; so much so that on post mortem examination the contents of the stomach has often been found as hard as cement. Loss of appetite, cessation of rumination, and the usual febrile symptoms are more or less marked, and when “Red Water” attacks milch cows, the milk supply is greatly diminished. The urine is greatly discoloured and usually froths when it falls to the ground; but does not coagulate or clot as is the case normally.

Treatment.—The great aim in treating “Red Water” is to get the bowels well opened as quickly as possible, so give full doses of the Extra Strong “Red Drench”* in a couple of quarts of gruel and a pound and a half of treacle. This not only removes any irritating material from the bowels, but overcomes congestion or over fullness of the Liver. Repeat the “Red Drench” in smaller doses every eight hours until the bowels are thoroughly acted upon, then follow on with the “Red Water Specific” as directed. It is a good plan to place in front of the patient a large bucketful of hay or bran tea, or cold water or milk, so that it can drink at will. Enemas of warm soapy water are often useful, and for getting the blood rapidly into a healthy state nothing can surpass the “Kossolian Blood Salt,” given once or even twice daily during convalescence. The diet should consist of bran mashes containing salt, cake, decoction of linseed, boiled barley, oatmeal gruel, milk, eggs, etc., but withhold all roots for a week or two. Rub the loins with the “Chemical Extract,” once daily, if painful on pressure.

* A practical customer writes :—“I always give a couple of packets of your ‘Red Drench’ mixed with a pound of lard or cream, followed by the ‘Red Water Specific,’ with excellent results.”

In some of the protracted forms of the disease a course of tonic medicine is indispensable, and in these cases a few half bottles of the "Gaseous Fluid" given by way of a change to the "Kossolian," will prove of great benefit, especially if given in a little old ale or stout.

RETENTION OF THE AFTER-BIRTH OR CLEANSING.

Causes.—Normally the foetal membranes are thrown off a few hours after calving by a slight recurrence of the "pains," and it is mainly owing to their absence that retention occurs. Retention is also associated with premature births and occurs in animals that are weak or debilitated, also in dealers' cows, as they have a lot of knocking about and so hold their cleansing. The "cleanse" is sometimes retained for a week or more, but there is always a risk in this, for while one animal will retain the after-birth for a considerable period without bad effects, another in 12 hours will show evidence of septic poisoning.

Symptoms.—Straining, loss of appetite and cud, fever, quick pulse, general weakness, and an ill-smelling discharge from the vulva.

Treatment.—Should the cow fail to discharge the placenta and not appear debilitated or off-appetite, give one, or even two full doses of the "Red Drench" in a pint of good warm ale or linseed gruel, but if the case be a tardy one it would be better to give the "Special Cleansing Drench," as directed. If retention of the "cleansing" is thought to be owing to debility or want of tone to the walls of the uterus, omit giving the "Drench" and give instead repeated doses of the "Gaseous Fluid," with the best quality food, little and often. If after forty-eight hours the "cleansing" has not come away, and the cow is still off her feed, roll the protruding portion round a stick and give it a turn or two daily every time the animal attempts to strain. Be very careful not to break the membranes by using too much force (which is easily done if decomposition has set in), for if this occurs a portion may be left adhering to the womb, which usually causes serious results.

After the removal of the placenta, inject into the womb by means of the "Simplex" Clyster Syringe, a solution of

the "Globe" Disinfectant (two tablespoonfuls to half gallon of water) as directed. After-pains are frequently associated with retained placenta, and should they appear, the "Gaseodyne" is thoroughly to be relied upon, if given every four hours. It acts as a sedative and tonic.

Prevention.—Keep in-calf cows in a natural breeding condition, and their blood pure by periodical doses of "Kossolian."

RHEUMATISM, JOINT OR CHINE FELON, CRIPPLES, Etc.

Causes.—This painful affection is most prevalent in cold, marshy districts, and frequently follows exposure to cold and wet, especially after calving, or if the animal happens to be debilitated from want of proper food, etc. Highly bred calves are very subject to this disease. This painful affection is better known by the name of "Cripples" in Australia.

Symptoms.—The patient is generally noticed to arch his back, and walks as if on stilts, owing to the pain and stiffness in the part affected. One or two of the limbs may be affected, or in some cases merely a joint or tendon. When it attacks the joints there is usually a hard, hot and tender swelling present. The tendency of the swelling and pain to shift from one part to another, is characteristic of the affection.

Treatment.—Remove the animal at once to a warm, dry, and well-littered stall, for during the febrile stage the recumbent position is often maintained. Give a dose of the "Red Drench" in plenty of oatmeal gruel or a pint of linseed oil, until the bowels are well opened, and repeat again if necessary. Following this give the "Felon Drench"* as directed, and continue its use for three or four days, or as long as the acute symptoms last; but should the pain be extreme add a dose of the "Gaseodyne" to it. The affected parts must be well fomented several times daily with hot water, and when carefully dried, rub in the "Brown Chemical

* A customer writes :—"I always find one of your 'Felon Drenches' in some beer and a wineglassful of the 'Alcoholic Ether' at night most effectual."

Extract." Following this it is a good plan to either apply bags of bran soaked in hot water, or to cover up the affected part with a rug, but on no account leave the former on till it gets cold. The diet must be light at first, consisting of bran and linseed mashes, hay grass, gruel, and luke-warm hay tea, etc. It is always advisable (even should the animal show signs of an improvement) to follow on with a course of the "Kossolian Blood Salt," which can be easily mixed up in the feed every other morning.

RINGWORM OR WHITE SCAB.

Cause.—This is due to a parasitic fungus which lives in the skin and hair, and produces crops of seeds or spores; but these are so small as to be invisible to the naked eye. Neglect and dirt are conducive to this complaint.

Symptoms.—The disease produces redness and itching, which is quickly followed by shedding of the hair in round patches, and the formation of grey crusts varying in size from a sixpence to a crown piece. It usually affects the shoulders, cheeks, face, eyelids, and root of the tail, and is most prevalent among young stock in a poor or half-starved condition at the end of the winter.

Treatment.—Separate at once the diseased from the healthy, as the affection is very contagious, and give a full dose of the "Red Drench," repeating the dose on the third day so as to cleanse the blood and purify the system. The inner edge of the hard grey crusts must first of all be broken down or removed, and then washed with soft soap and water: this done, apply the "Ringworm Ointment" as directed, or if a liquid is preferred the "Xemos." In some of the milder cases it is only necessary to apply



Fig. 73.
Calf with Ringworm patches
around the eyes.

it to the diseased patches every second or third day, by means of a stiff brush of convenient size. The blood of patients affected with Ringworm is usually in a very bad condition, and it is absolutely necessary that it should be acted upon. For this purpose nothing can surpass the "Kossolian Blood Salt" given in the food for about a week or ten days. Exercise, cleanliness, and a more generous diet, such as linseed cake, etc., are most desirable after the expiration of the fourth day. As the spores of the fungus will linger on woodwork for many months, all stalls, rubbing posts, brushes, etc., should be thoroughly cleansed with "Globe" Disinfectant. It must be remembered that Ringworm is easily transmissible to man, so in treating animals for it, wear gloves so as to keep the nude parts covered.

ROPY OR STRINGY MILK.

Cause and Symptoms.—This condition is due to the presence of various micro-organisms in the milk, which may have gained entrance in the cow-shed or dairy, and changes the character of the milk in twenty-four or thirty-six hours after it has been withdrawn. The milk looks thick and viscous, which can be drawn out into threads like mucus, and adheres to the milk vessels like treacle. This kind of milk is not prejudicial to health, but is of course bad from the seller's point of view.

Treatment.—This must be resorted to at the outset to be of any use, as the micro-organisms increase so rapidly. Give a dose of the "Red Drench" for three consecutive days in a quart of gruel and a pound of treacle. After this the "Vetamenta" should be given the last thing at night as directed. Allow plenty of ventilation and employ the "Globe" Disinfectant freely to the drains, etc. All milking vessels, strainers, cloths, etc., must be scalded and kept scrupulously clean immediately after milking. Let all affected animals be milked last, and see that the room where the milk is kept is thoroughly cleansed and disinfected. The diet must be light and nourishing, and on first symptoms of ropy milk the affected cows should be placed in another field. *See also* Mammitis (Contagious).

SCURFY SKIN.

Cause.—This may arise from lice, uncleanness, or poverty of the blood, etc.

Treatment.—Commence by giving a full dose of the "Red Drench" in a quart of linseed or oatmeal gruel, and then use the "Dermoline" (a Cattle Shampoo) to the affected parts as directed on tin. In order to get the blood into a pure condition give the "Kossolian Blood Salt" once daily, for four or five days, then once every alternate day. If this treatment be adopted the coat will soon assume a glossy and healthy state, but the great point is to purify the blood.

SETONING THE DEWLAP.

A Seton is a piece of tape or cord passed through the various parts of the body, as, for instance, the dewlap when setoning against Black-Quarter. They are inserted by means



Fig. 74. A Seton Needle, with movable handle.

of an ordinary seton needle, which can be removed from the handle, or by a fixed needle which has the eye near the point. They are generally inserted transversely through the dewlap or at one side only. When the stitch has been made the ends of the tape should be well knotted, and every other day wash the seton clean and pull it backwards and forwards in order to keep up the irritation. Tying the ends of the tape together to form a ring is to be strongly deprecated, owing to the risk of the seton getting hung up in any projection and being torn out bodily, when the animal finds itself caught. The tape or cord should be medicated by dipping either in the "Chemical Extract," "Antiseptic Dressing" or mild "Blister Ointment," and repeated once a week. The skin below the seton should be well greased with either vaseline or lard, so as to prevent the part getting scalded with any pus that may be discharged. This operation is usually performed about September or October, and in spite of the introduction of various "Vaccines," which require the attendance of a qualified "Vet" the treatment we have prescribed has been found to answer splendidly.

SORE OR CHAPPED TEATS.

Causes.—This condition usually occurs after calving, but may be caused by cold winds or by injuries.

Symptoms.—Cracks and sores on the teats, causing much pain and uneasiness at milking time.

Treatment.—Apply repeated hot-water fomentations, taking care to dry the teats afterwards with a soft cloth. After milking, anoint with the "Sore Teat Lotion" as directed; this Lotion not only cures all cracks and sores, but tends to keep off the flies which are so troublesome in the summer. If there is any obstruction to the teats, a small silver tube, as illustrated, on page 115 must be used, it being specially made for the purpose. This tube is left in the teat, and is so constructed that it can be retained in position by means of a tape. Every dairyman should possess one of these milking tubes or, better still, have three sizes, so as to enable him to push up obstructions or to withdraw the milk. Always sterilize them first of all in boiling water, and then introduce them very gently up the teat opening. Give the animal a dose of the "Red Drench" every fourth or fifth day, to cool the system, and feed lightly. Splits and holes in teats are not uncommon, the only cure is to stitch the edges together, and anoint daily with the "Sore Teat Lotion" or "Chemical Extract," if the former be not at hand.

SORE THROAT OR QUINSY.

Cause.—Very often a neglected cold.

Symptoms.—The patient refuses food, pokes his nose out, breathes quickly, and makes a peculiar noise in the throat.

Treatment.—Apply a smart application of the "Brown Chemical Extract" to both sides of the throat, and place a little of the "Easakof" either on the tongue or between the molar or back teeth every three hours. Feed on a light sloppy diet, little and often, and avoid a draught. With convalescence give a good tonic medicine, such as the "Gaseous Fluid," so as to brace up the entire system.

SPRING ERUPTION OR SURFEIT ON SKIN.

Cause.—Change of diet, expecially when cows have been poorly fed during the winter, and are put on to something better.

Symptoms.—Continual irritation of the skin, including the body and even the limbs. Hard pimples soon appear, and these form into scabs which later on drop off and leave bare patches.

Treatment.—Give a full dose of the “Red Drench” in a quart of gruel, to which add a pound of treacle, and repeat on the fourth day, giving a nourishing diet of a cooling nature. In the majority of cases all that is necessary is to wash the skin with the “Dermoline” or Cattle Shampoo as directed, but in obstinate cases something more astringent, such as the “Sulphuretted Ointment,” will be necessary. The blood in nearly all skin diseases is found to be in an impoverished condition, and a course of the “Kossolian Blood Salt,” with an occasional dose of the “Red Drench” is indispensable.

STERILITY OR BARRENNESS IN COWS AND BULLS.

Causes.—Sterility or lack of regularity in breeding is a great source of trouble and loss to the stockowner. To own a bull to which a great number of cows miss or do not “hold,” or a cow that is constantly showing signs of sexual excitement, yet never proving in calf, is an intolerable nuisance. Such animals upset the dairyman’s calculations, render him short of milk, when he has contracts to fill. Sterility may arise in both sexes from a variety of causes, some being general or common to both, and others special to the individual, as when there is disease of the organs of reproduction. Excessive fatness in breeding animals is greatly against regularity, and with in-breeding leads to degeneracy, impairs the vital forces, diminishes vigour, and reduces or destroys the power of reproduction. With regard to the male, a cause specially affecting the bull is excessive service, which means that there is an absence of the Spermatozoa, or male cells.

Impotence in the male may also result from some malformation or disease of the genital organs. Such animals are often over-worked at one season, and kept in idleness and over-fed at others. This is especially the case with bulls kept for general service, and where a fall of calves is desired at a particular time. It is impossible to lay down hard and fast rules as to how often an animal should serve, since it will vary with the age, vigour, and management, but there is room for the exercise of care and judgment, especially as regards the young and immature, in whom too early exercise of the procreative function not infrequently induces a nervous disorder, which is also a cause of Sterility. In the case of cows, constant sexual desire, without conception to repeated service, often results from disease of the generative apparatus—Leucorrhœa, or “Whites,” Ovarian Dropsy, etc. Sometimes the trouble arises from the non-appearance of œstrum, the female manifesting no desire for the male, this being in all probability due to the absence of the ovum or egg, at others it may be connected with lactation, for we frequently notice that many cows do not come in season if giving a considerable quantity of milk. Thus it happens that very often the cows we would like most to breed from exhibit temporary Sterility. Generally such animals appear at once in season, and readily conceive, when dried off and turned out, or tied up to fatten as barrens.

Treatment.—This is invariably successful for all ordinary cases, especially those due either to excessive use of the sexual organs, or a too high condition, etc. Feed on a light and nutritious diet in small quantities and often, and sprinkle all food once daily with the “Kossolian Blood Salt,” for a week or ten days before service, and for a few days afterwards. To bulls in which the impotence is due to debility, give a rest, and the best nourishing food little and often, sprinkling the “Kossolian” on same once or twice daily. This preparation, by virtue of its phosphoric and other important ingredients, has the action of gently stimulating and bracing up the generative organs and system. In those cases due to an acid condition of the vaginal secretions (and it is difficult to say which are and which are not), good results are often obtained by the injection of the “Uterine Solution”

several days before service, for this counteracts this acidity which is so fatal to the fecundity of the male cells or Spermatozoa.

Bean meal has a reputation for bringing on cows that are shy breeders, and where no constitutional disease exists it is often useful to run such animals in company with a vigorous young bull. Bulls may be used for breeding purposes at two years old, but it is advisable to limit them to fifteen or twenty cows. Avoid sending cows or heifers to the bull too soon after Abortion.

SWOLLEN OR BIG KNEE.

Cause.—This is an unsightly swelling which usually arises from heavy cows lying on hard or stony floors, and thus bruising the bursa, which causes a fluid distension.

Symptoms.—The knee is enlarged, and when of recent origin is hot and painful on pressure, and if not attended to promptly the joint may become permanently stiff.

Treatment.—In recent cases subdue all heat and tenderness by warm fomentations. After this the “Kurbicura” will cause a reduction of the swelling by absorption, if used as directed. If this has no effect, and the swelling is very large and fluctuating, it should be boldly slit open at its lowest part and emptied, after which apply daily injections of the “Antiseptic Dressing.” The knee should be protected from further injury by the provision of good thick bedding.

TAPEWORMS.

Symptoms.—These parasites are frequently found in the stomach and intestines of cattle, and, unless promptly treated, result in serious injury to health and sometimes death. The patient goes off in the milk supply and loses flesh rapidly. Some of our customers have had three or four handfuls of these pests come away after treatment.

Treatment.—Commence by giving a packet of the “Red Drench” overnight, and first thing in the morning give a full dose of the “Broncholine” in a quart of gruel; this must be repeated on the second and third morning. Feed lightly to begin with, and on the fourth day give better food

in small quantities and often, and sprinkle same with a little of the "Kossolian Blood Salt," which will increase appetite and help on to condition. The "Broncholine" should be

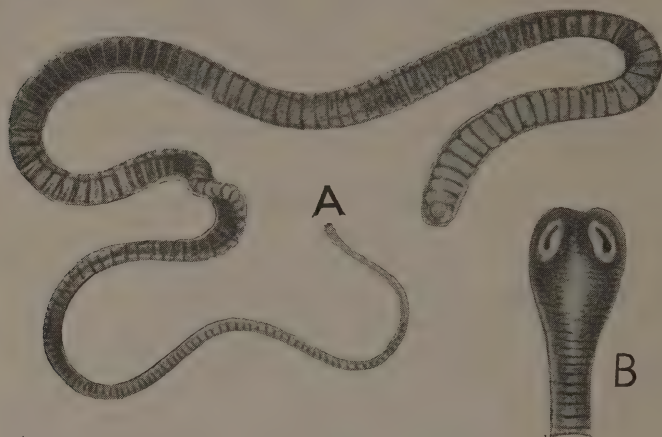


Fig. 75.
Tape Worm (*Taenia Expansa.*)
A. Head of Worm. B. Head enlarged.

given again in ten days' time, and during treatment the animal must be housed, and all litter containing expelled parasites, burned.

THE BLOOD.

That complex fluid which constantly circulates through the arteries and veins of all the higher animals, is the great medium of exchange, by which materials are supplied for the nourishment of the tissues of the body, and their waste products removed. Physiology and Pathology have advanced from crude theory and superstitious empiricism to exact sciences; schools and systems of medicine have had their rise and fall; Bacteriology, thanks largely to the microscope, has made rapid strides, and yet, during all time since the aged Israelitish law-giver pronounced his famous dictum that "the blood is the life," down to these days of Pasteur, Koch, and other scarcely less eminent Pathologists and Bacteriologists, the blood has universally been regarded as "the vital fluid."

The blood is a red fluid of which we have two kinds, viz:—Arterial and Venous, the former being of a bright scarlet colour and the latter of a dark brownish-red colour. This

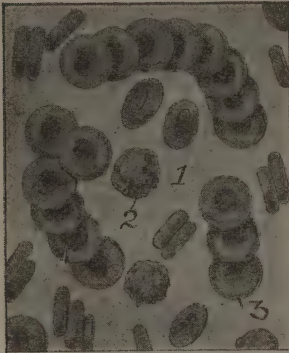


Fig. 76.

HEALTHY BLOOD.

The constituents are:—

1. Clear Serum.
2. White Corpuscles or Leucocytes.
3. Red Corpuscles.

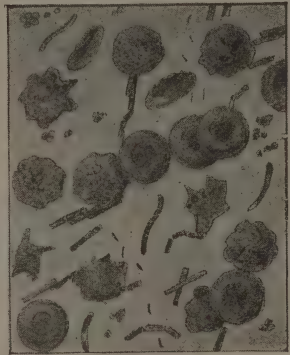


Fig. 77.

UNHEALTHY BLOOD.

In this the Serum is thin and poor. The White Corpuscles altered in shape. The Red Corpuscles flattened and irregular, with broken and crenated edges.

difference in colour is due to the amount of oxygen present in each. The blood itself consists of red and white corpuscles and what is termed *Liquor Sanguinis*, or *Plasma*; but in addition to this there is a certain amount of mineral matter.

In all debilitating and wasting diseases, where the blood has become unhealthy, the "Kossolian Blood Salt" is imperatively called for. The effect is at once recognized, for it prevents the rupture of the blood vessels and tends to build up the weak ones. This medicine also appears to have the peculiar power of stopping decomposition, and undoubtedly assists in the work of protecting the system from any invasion of disease-producing germs. An occasional dose enables the excretory organs to eliminate all unhealthy products.

TICKS.

Ticks are closely related to the spider tribes, but are not entirely parasitic, for only a portion of their lives are spent upon the bodies of their hosts. These insects attach themselves firmly to the skins of animals by their legs and, having penetrated the skin with its dart-like process, engorge themselves with blood to such an extent that they enlarge to sometimes four times their normal size. When this takes place they are very difficult to detach.

Treatment.—Hand-picking is about the best method, although tedious, but if in great numbers the "Special" Tick Ointment is advisable, provided there are no raw parts, as it is poisonous. If, however, it is used as directed there is practically no chance of it injuring the patient. Mild applications are worse than useless.

TUBERCULOSIS OR CONSUMPTION.

These are terms given to a disease in which numerous small nodules are present in the glands, lungs, or other organs of the body, due to micro-organisms called *Tubercle Bacilli*.

Cause.—It is now recognized that Tuberculosis is both infectious and contagious, and the identity of the organism causing it, as well as that responsible for human Consumption, has been established.

In the Island of Jersey, where cattle are usually kept in the fields, Tuberculosis is comparatively speaking unknown, but it is always rife in town dairies, owing no doubt to a state of confinement; hence sheep seldom contract it because they are invariably in the open air.

Symptoms.—Cows suffering from Tuberculosis generally have a bad cough, staring coat, offensive breath, and gradually lose condition and weight, though feeding and milking fairly well. There is a discharge from the eyes and nose, and Diarrhoea may or may not be present. The patient has a dejected appearance, and the milk is bluish in colour and watery. As a rule this malady does not manifest itself till animals are nearing puberty (two years old).

Treatment.—When a cow is found to be affected, the best plan is to isolate her, and dry up her milk by a few doses of the “Drying Drench.” Feed on the most nutritious and fattening foods, such as linseed cake, corn, and good hay. Give water in which linseed has been boiled, instead of pure water for drinking, but avoid roots and grasses. Frequent rubbings of the throat and chest with the “Brown Chemical Extract” will do good, and having got her into as good a condition as can be expected, feed for the market as quickly as possible, as the cow will be unsuitable for breeding. For assisting in purifying the

blood and hastening on the fattening process, nothing can surpass the “Kossolian Blood Salt” sprinkled among the food daily for a week or ten days, or, better still, given as a drench in a quart of gruel made from the “Cod Liver Oil Powder.” The milk from a tuberculous cow must on no account be used for human consumption, although the bacilli may not be present, as the disease is so readily communicable to man; this is especially the case if the udder be affected. The Tubercular test is a fairly reliable agent to use in the hands of experts.



Fig. 78.

- A. A portion of Cow's Lung, showing acute Tuberculosis.
- B. A part in section, showing solidification and final breaking-up.
- C. Bacilli of Tuberculosis.

VAGINITIS IN COWS.

Cause.—This is either due to infection from the bull or to injuries done during difficult calving.

Symptoms.—The lips of the vulva are swollen, red and sensitive, and there is a continual discharge of mucus from the vagina.

Treatment.—Commence by injecting, by means of the "Simplex" Enema Syringe, a pint of warm water (the same temperature as the body), or better still, the same quantity of Infusion of Linseed,* once or twice daily for a few days. This will subdue the excessive sensibility and soothe the parts. After this inject the "Antiseptic Abortion Mixture" as directed, by means of the glass syringe, which is specially adapted for the purpose. Feed the patient on the best food little and often, and give occasional doses of the "Gaseous Fluid" in some old ale or gruel. Keep the hinder-parts clean and the stall disinfected by the "Globe" Disinfectant. If Vaginitis is not overcome by suitable remedies, it is easily transmitted to the bulls by copulation (called "Bull-burnt," see page 106), they serving as propagators of the disease to other cows, which is frequently the cause of Sterility, Abortion, and what is termed "Turning."

The patient must be kept from the bull till cured, otherwise there is great risk of further infection.

VEGETABLE POISONS.

Vegetable poisons form a much larger and more important class than the mineral, for the latter are dependent to a great extent upon carelessness, ignorance or malice, for their administration. Amongst the foregoing most frequently met with are :

Yew or Rhododendron Poisoning.—The common yew, *Taxus baccata*, is a very frequent source of stock poisoning, in all probability due to shortage of fodder or water. The shrub is too well known to need description. Whatever its beauties as an ornamental plant, it should not be grown in situations where its branches overhang the pastures, and great care should be taken to clear up cuttings, for the poison is far more virulent in these young shoots.

Symptoms.—The animal suffers little or no pain, but is generally violently sick and if not promptly treated dies in a few hours. The stomach becomes painfully distended and saliva runs from the mouth. Sometimes the animal is found dead with the yew in his mouth.

* To make an Infusion of Linseed, place about a pound of Linseed in a closed vessel and add two or three gallons of boiling water to it. Allow to cool, and then strain off the sediment.

Treatment.—There is unfortunately no antidote to Yew, so give a couple of doses of the “Gaseous Fluid” in two quarts of strong hot coffee, followed by an occasional dose of linseed oil. During convalescence feed on soft food for several days.

Acorn Poisoning.—Every year when the fruit of the oak is plentiful, and above all when high winds bring them down in an unripe state, a number of cattle are lost from Acorn poisoning. Cases are more likely to occur after a dry season, when the grass is scarce and lacking in succulence. It is the outer husk of the seed that does the most harm.

Symptoms.—In the milder cases constipation is one of the most prominent symptoms, but when large quantities have been eaten it is followed by Diarrhœa. Rapid loss of flesh, pains over the loins and kidneys, loss of appetite, shrunken eyes are also noticed.

Treatment.—Prevention lies in having the fallen acorns gathered, or removing the cattle from the pastures until they have been picked up by pigs, poultry, pheasants or pigeons. Give a full dose of the “Red Drench” either in two quarts of hot strong coffee or in some oatmeal gruel, and follow on with a pint to a pint and a half of linseed oil every other day. When convalescent give the “Gaseous Fluid” twice daily in some old ale, so as to tone up the debilitated system.

WARBLE, BOT, OR GAD FLY.

This important subject is acquiring greater prominence in the minds of all intelligent Agriculturists year by year, for it has been estimated that the damage done by the Bot or Warble Fly is about £3,000,000 annually. The “Warble Fly” causes cows to gallop about and become wild with fright, and as a consequence the yield of butter and cheese becomes greatly interfered with, and rapid loss of condition ensues.

Cause.—The Warble Fly attacks cattle during the months of June, July and August, and in time deposits her eggs on the hair or skin of the animals, these developing into

maggots later on. Here they eat their way towards the lower part of the skin, and remain there until about Christmas, feeding on the ulcerated matter produced by their continual irritation.

Symptoms.—Their presence at this stage is clearly indicated by passing the hand over the skin, for the warble-lumps frequently attain the size of a walnut, and their favourite

position is between the top of the shoulders and the loins. In February a small aperture can be discerned through the summit of the warble lump, through which the head of the maggot is often visible. It is at this spot that the warble is enabled to breathe, by means of its respiratory organs, these being situated at the tail end of the body. In April or May all cattle should be examined, for the full-grown warble forces its way out of the hide and drops to the ground, when it becomes a chrysalis, and in time a fully-developed Warble Fly.

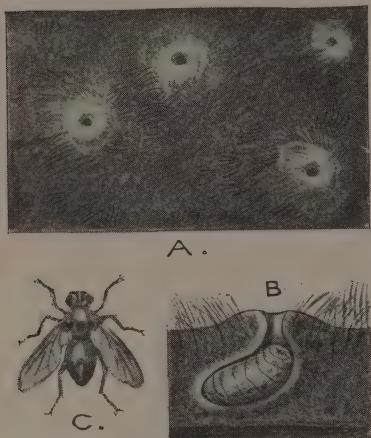


Fig. 79: (After Ormerod.)

- A. Portion of skin, showing raised prominences due to underlying maggots.
- B. Section showing maggot under the skin.
- C. Adult fly.

Preventive Measures.

—It having been ascer-

tained that every Warble Fly deposits one or more eggs in the backs of cattle, the great aim of stockowners must be directed towards preventing this process taking place, and this can be effectually accomplished by dressing all outlying cattle with the "Anti-Fly Dressing" as directed. In sultry weather the flies are more numerous and irritating, and it then becomes necessary to apply the above once or twice a week with a brush, all along both sides of the spine, particularly about the chine region. This preparation forms one of the safest and best preventives against all flies striking, and heals all sores or

wounds with which it comes in contact, thereby allowing animals to graze in perfect peace and comfort, with the best possible chance of thriving rapidly. During the hottest parts of the days in July keep the cows in airy sheds and feed them on such green diet as fresh grass, vetches, sanfoin, lucerne or clover. By adopting this plan a good supply of milk will be obtained, and this of good quality. Young animals or those in good healthy condition are generally chosen by the fly, their skins being soft and more easily penetrable.

The Tsetze Fly is seen largely in South and East Africa and poisons cattle by means of its sting. The "Anti-Fly Dressing" is equally invaluable for applying to the bites.

Destruction of the Warble.—From the foregoing it will be gathered that no egg can lie over the first winter without either dying or hatching into life; therefore, were all the warbles destroyed before they issued from the skin in the spring, no flies could possibly develop. For this purpose, then, we advise the "Warboline Ointment," which will be found safe and effectual, and in no way injurious. It is only necessary to rub a small piece of this "Ointment" into the little warble hole and this will be found to kill and shrivel up the insect, without in any way injuring the hide. We have the authority of the late Miss Ormerod for the statement that the destruction of warbles is one of the few things in which each owner benefits by his own work. From special observations it has been found that where warble-maggots have been destroyed before they drop from the cattle, there is little, if any, summer attack of warble-fly. The fly, when it emerges from the chrysalis, does not wander far from the field in which it was hatched, but remains to torment the cattle of the careless owner who does not trouble to dress his stock. In certain districts it seems to be an established fact that the eggs of the Warble Fly enter the body by the stomach; but how they migrate from there to the tissues underneath the back of the beast, we are not told.

Mr. H. Chambers, of Path Farm, Othery, Bridgwater, writes:—"Your 'Anti-Fly Dressing' has given me great satisfaction, and my cows were not in the least disturbed with the Warble or Gad-fly, whilst others in adjoining fields have been charging through the fences."

WARTS OR ANGLEBERRIES.

Cause.—These unsightly growths are due to an overgrowth of the papillæ of the skin, and are principally seen about the eyelids, lips, and teats, some of which bleed on the slightest pressure. For this

reason it is desirable to accomplish their removal, as far as possible, without effusion of blood. When warts are repeatedly subjected to friction, they soon ulcerate and present ugly fungus-like masses which project from the surface of the body. Nothing definite is known as to their cause; but, although dirt appears to have an exciting influence, some authorities say they are constitutional. The removal of

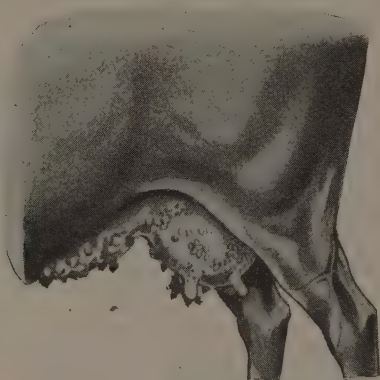


Fig. 80. Warts on Udder.

warts about the udders requires considerable caution so as to avoid injuring the teats, and, when seen in large numbers, a qualified Veterinary Surgeon had better be employed.

Treatment.—When small and attached to the skin by a neck, a strong ligature of waxed thread should be applied round the base or narrow part, and the warts so strangulated will gradually drop off, is a safe plan, if the parts are anointed immediately with the "Chemical Extract." When too numerous for this, the only method left is to cut them off close to the root, and apply the hot iron to arrest bleeding. When present in large numbers, or in such a position that direct removal is impossible, it is advisable to dress them daily with the "Special Wart Solvent," when the cow is dry. For warts on the eyelids, cover the lower portion with Vaseline, and then carefully apply the "Special Wart Solvent," as directed. Some practitioners are in favour of destroying these growths by the application of strong caustic agents; but this is not only a slow process, but to the uninitiated rather dangerous.

WEN, CLYERS OR LUMPY JAW.

Cause and Symptoms.—This growth generally attacks the lymphatic glands about the region of the pharynx, from which it extends in the direction of the parotid glands and external surface of the neck.

It sometimes interferes with swallowing, and increases to such a size that unless the animal is relieved it dies from sheer exhaustion. In the majority of cases it increases in size slowly, and the scrofulous contents does not appear to cause sufficient inflammatory action to induce the abscess to burst. When opened it contains a flaky sort of pus, which in time softens. This disease is similar in origin to Actinomycosis, or "Wooden Tongue," the only difference being its situation (*see page 99*).



Fig. 81.

A Cow with a Lumpy Jaw, or Wen.

Treatment.—Give the "Timber Tongue Cure" as directed, and fatten the animal up for the butcher as soon as possible by giving good food and sprinkling same with the "Kossolian Blood Salt." In certain cases the "Kurbicura" has considerably helped in the reduction of the swelling.

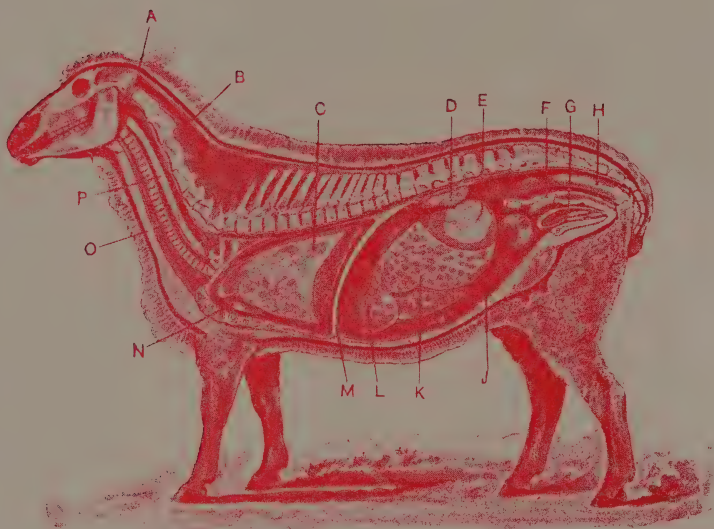
"WHITES" OR LEUCORRHOEA.

Causes.—This generally affects old cows, and is contracted either from Gonorrhœa of the bull, or retained after-birth, etc., but may occur independently of these causes.

Symptoms.—A white slimy bad-smelling discharge is noticed issuing from the vulva, especially when the patient coughs or lies down, this being so extensive that it often runs down the thighs and tail. This condition is usually accompanied by general loss of condition and appetite. Cows should not be put to the bull whilst suffering from this disease, otherwise Abortion or non-conception will probably ensue,

Treatment.—This should be promptly attended to, or more serious consequences will follow. Give a tonic medicine such as the “Gaseous Fluid” in a pint of ale twice daily, and a nutritious diet, consisting of oil-cake, bruised oats, oatmeal and malt, etc. Allow plenty of open-air exercise. The special “Lotion for Whites” must be syringed up the vagina as directed, and when a cessation of the discharge is apparent, get her served again by a young and healthy bull as soon as she comes in season. If the case is a very obstinate one, it points to a Scrofulous condition of the uterus, which is unfortunately incurable, and it is only a waste of money to attempt to treat. (*See also* “Vaginitis in Cows,” page 165.)

SHEEP. —The Internal Organs.



- A. Poll or Crest of Skull.
- B. Suspensory ligament of Neck.
- C. Left Lung, cut to show form of diaphragm.
- D. Kidney.
- E. Rumen or First Stomach.
- F. Uterus or Womb.
- G. Bladder.
- H. Rectum or terminal portion of Large Gut.

- I. Udder.
- J. Small Intestine.
- K. Omentum, a thin membrane covering all the internal organs except Liver and Bladder.
- L. Part of Liver.
- M. Diaphragm.
- N. Heart.
- O. Windpipe or Trachea.
- P. Gullet, leading to Stomach.

SHEEP.

ABORTION.

Cause.—This may result from dogs over-hurrying ewes heavy in lamb, hounds running through the flock, errors in diet, such as giving frosted roots, mouldy or unripe hay, unwholesome water; or exposure to cold and wet.

Treatment.—On first signs of impending Abortion, separate the ewe from the rest of the flock, placing her in a warm stall and giving a dose of the “Red Drench” in a pint of warm gruel sweetened with treacle. Keep the patient as quiet as possible, and follow on with a dose of the “Gaseodyne” every three or four hours until all straining and excitement is over. Feed on a soft diet of mashies, gruels, etc., avoiding all grain until the after-birth has come away. Cleanse the hinder parts, including the vagina, with luke-warm water daily, and inject into the womb the “Anti-septic Abortion Mixture” by means of the “Simplex” Clyster Syringe as directed. To this may be added a little “Gaseodyne” if the ewe is in much pain. Be careful to bury deeply or burn all aborted remains, and thoroughly disinfect the pen or shed with the “Globe” Disinfectant. With convalescence build up the weakened system with small doses of the “Gaseous Fluid,” given two or three times daily in some warm ale or stout.

BARRENNESS OR STERILITY IN RAMS AND EWES.

Causes.—These are various, but if due to some constitutional defects nothing can be expected to do good. If, however, the ram or ewe be a little debilitated or run down in condition, it stands to reason that the blood becomes impoverished, and this being so the ovaries of the female or testicles of the male lack their natural stimulus, which interferes with their functional activity.

Treatment.—Pure blood is therefore of the utmost importance to proper conception and for such a purpose the “Kossolian Blood Salt” is indispensable owing to its iron and phosphoric ingredients. It is essential in order to get animals into a vigorous condition that they should have plenty of exercise, and not be allowed too much rich food. In certain cases the injection of the Antiseptic Abortion Mixture is indicated about half an hour before the ewe is served, especially if the mucous discharges of the vagina are suspected of being too acid. A little of this mixture should also be added to the drinking water a week or ten days before connection with the Ram.

BLACK LEG OR QUARTER-ILL.

Cause and Symptoms.—This is a blood disease and is most prevalent on low-lying pastures liable to be flooded. The patient generally falls lame in one limb after lambing, which soon becomes puffy; and if the skin be examined it is noticed to be black, and on passing the hand over it a cracking sound is produced.

Prevention.—Curative treatment is seldom of any avail, as death takes place so rapidly; this being so the great object must be to prevent further attacks. Give occasional doses of the “Red Drench” to the apparently healthy animals during an outbreak, and sprinkle the food twice or three times a week with the “Kossolian Blood Salt,” this being one of the finest blood purifiers known to Veterinary Science. Keep sheep off infected pastures and burn all dead subjects; also thoroughly disinfect all stalls, etc., with the “Globe” Disinfectant periodically.

BLACK MUZZLE IN SHEEP.

Cause.—This is a form of sheep mange, and due to a parasite or Sarcopt and is most infectious.

Symptoms.—Scabs form on the udder, teats, nose and sometimes mouth. The affected animals become listless, and their ears droop, due to extreme Debility.

Treatment.—This must be prompt to be successful. Remove the diseased to a bare paddock, and having softened the crusts or scabs by washing in soap and water, or by rubbing them off with the back of a knife (so as to allow the remedy to penetrate better), apply the “Sulphuretted Ointment” for two or three consecutive days. After this wash the ointment off, and repeat the dressing if necessary. Give an occasional dose of the “Red Drench” and a light laxative diet, so as to cool the system, and pay particular attention to proper disinfection. All hurdles, posts and feeding racks against which sheep rub their noses must be thoroughly cleansed with the “Globe” Disinfectant, or healthy animals will certainly become affected.

N.B.—*See also Sore Lips, Aphthae, etc., page 212.*

BLINDNESS, OPHTHALMIA, OR SKUM ON EYES.

Cause.—This complaint is often spoken of as “blinds,” and frequently assumes an epizootic character among sheep. It generally arises when changing from a poor short to a rich long grass, and affects the young sheep of flocks kept in exposed positions. Some authorities regard it as infectious, but the fact that it has attacked a number of animals at one time is probably due to the exposure of the whole to the same unfavourable conditions. If not attended to at once it rapidly reduces sheep in condition, and there is great danger of them running into ponds or other dangerous places.

Symptoms. — The animals affected stray from their fellows, have a slight discharge of a watery nature from the eyes, which later on becomes viscid in character. In a few days the eyes become covered with a greyish film or skin which more or less blinds them, and unless a suitable remedy is applied the trouble becomes permanent.

Treatment. — First of all remove the affected animals to a darkened shed or other place where the sun’s rays cannot enter, and then bathe the eyes with a little milk and water. Following this smear the eyelids (especially the top ones) over with the “Special Eye Ointment”* every two or three days,

* *A customer writes:—“We treated all our affected Ewes as directed in your handbook and are pleased to say they all recovered and are now quite sound. We feel convinced the complaint was infectious.”*

allowing it to run on to the eyes. When the eyelids stick together, it is advisable to carefully separate them with a bit of wood cut in the shape of a paper knife, but not too sharp for fear of injuring the eye itself. Following this, apply the "Eye Ointment" as directed.

Give an occasional dose of the "Red Drench" in oatmeal gruel sweetened with treacle, and feed on a light and laxative diet. Place a lump of rock salt in the trough, and brace up the system by a course of the "Kossolian Blood Salt."

BRAXY, SICKNESS, OR STRIKE.

Cause.—This disease is seen extensively in the West of Scotland, North of England and West of Ireland, where the death rate is often 40 per cent. among the first year's sheep. It may arise from placing animals on rank indigestible grass from the time of weaning, or from cold and exposure; also from keeping them on one run of grass until it becomes foul or soiled. It is usually prevalent during the autumn, the most serious losses being amongst black-faced hogs that are in good condition. Braxy often runs through a flock like an epidemic, and it corresponds with Red Water in cows. Professor Hamilton maintains that Braxy is due to a bacillus, whose habitat is the alimentary canal.

Symptoms.—The affected generally separate from the rest of the flock, they lie down when the others are grazing, are restless, grind the teeth, have cold extremities, no appetite, and bowels constipated. The stomach swells, and if the animal be examined after death, the "manypplies" will be found full of hard, undigested food, and its inner coat very often comes off in patches. The cavity of the body is usually full of water tinged with blood, and the temperature rises from 105° to 108° Fahr.

Treatment.—Give on first symptoms a couple of packets of the "Ewe Drench" or a large dose of the "Red Drench" in some warm gruel and treacle, and feed on a spare diet, only allowing a little linseed cake. If the bowels still remain costive, repeat the dose, adding a couple of ounces of linseed oil to the "Drench." Later on with convalescence a few doses of the "Gaseodyne" will do much to build up the weakened

system and allay pain, and sprinkle all food with the "Kossolian Blood Salt." See that the drinking water is pure and uncontaminated, and change the pasture if possible.

Prevention.—Give wholesome succulent food, such as turnips (if procurable) and oilcake, combined with grain and bran, and shelter the affected animals. In addition to this, dose all sheep with the "Ovidyne" in October and November, say once or twice a week and again early in the New Year, if necessary. See that all carcasses, excreta, etc., be burned. Further, do not allow affected animals to be bled or slaughtered on ground to which the rest of the flock have access. Infected lands should be dressed with crushed rock salt, 5 cwt. to the acre.

CASTRATION OF LAMBS.

Lambs are castrated with the greatest safety when from about ten days to three weeks old. One man holds the lamb to his shoulder clasping the legs, while the shepherd cuts open the scrotum (purse) with a knife; then he either draws out the testicles with his teeth or with nippers. After this the ear is marked, the tail cut, and the lamb released. It is always a good plan, after operating, to walk *quietly* among the lambs and to examine any that are lying down or seem in pain, if so they will require treatment. When the lambs are allowed to remain over two months old before castration, the blood vessels must be closed in some way after the removal of the testicles, and this is generally done by searing with a hot iron; but it often happens that even when due care is taken a few die after the operation. The operator should always employ the "Antiseptic Dressing"* for anointing his hands, also for dressing the scrotum from time to time. If possible, castration should be performed on a dry, mild day, and in the morning, for this enables the shepherd to inspect them several times before nightfall. When excessive bleeding takes place, cold water should be freely applied to the part. The castration of the aged ram is best done by dividing the bag with the hot iron and searing off the testicles with the same instrument. The tailing or docking is done so as to prevent maggots, and the hind quarters certainly look rounder afterwards.

* *The ordinary Green Castrating Ointment can be had if preferred.*

COLD, OR SIMPLE CATARRH.

Causes.—Exposure to cold and wet, also contagion.

Treatment.—Place the affected animal in a comfortable stall and give a dose of the “Alcoholic Ether” as directed last thing at night in warm gruel, to which add a teacupful of treacle. In cases where sheep are situated some distance from the farm the “Vetalenta” will be found most useful, as it only requires the addition of a little milk, or may be given neat in cases of emergency.

COMING OUT OF THE WOMB OR EVERSION OF THE UTERUS IN EWES.

Cause.—This accident sometimes occurs three or four days previous to lambing, but more often immediately on delivery, owing to excessive after-pains which in the ordinary way are only intended to get rid of the after-birth or placenta. It may also arise from Debility.

Treatment.—Give the ewe a full dose of “Gaseodyne” in some linseed or oatmeal gruel, and repeat the dose in four hours if the straining continues. After this anoint the parts freely with either the “Carbolized Lambing Oil” or the “White Chemical Extract,” and then carefully return the uterus to its normal position by means of the fingers. The hands must be perfectly clean for the purpose, so as to avoid the introduction of all dirt and septic germs. At this stage inject, by means of the Clyster Syringe, a solution of the “Globe” Disinfectant once or twice daily, as it is one of the finest antiseptics and causes the uterus to contract, thereby closing any laceration that may have been caused in replacing it. The lips of the vagina should be secured with one of West’s clamps; also keep the bowels soft and the system cool by giving small and frequent doses of the “Red Drench” and bran slops. The young lamb or lambs should not be taken away, as the sucking tends to bring about the natural contraction of the womb. A dose or two of the “Gaseodyne” will soothe all pain and prevent all straining afterwards.

It is important to remember that all clamps or trusses should be removed when the true labour pains of lambing come on.

COUGHS (Ordinary).

Cause.—A cough is not a disease in itself, but only a symptom, and contrary to popular ideas not always of the respiratory organs. It generally arises from exposure to cold and wet, or may be due to a sore throat or irritation of the womb.

Symptoms.—The animal has an incessant cough, refuses food and is tucked up. On post-mortem examination the lungs show frothiness in the bronchial tubes, and white patches on the surface of the lungs like a mild case of consumption or tuberculosis.

Treatment.—A neglected cold very often causes a slight cough from irritation of the lining membrane of the throat, and when this is the case nothing can surpass an application of the "Chemical Extract" around the throat, from ear to ear. In addition to this give the "Cough Elixir" as directed, with a light and nutritious diet. If more convenient give the "Easakof" instead, the mode of application being to plaster a little on the tongue or between the teeth. Do not give dry food, and keep the patient out of draughts as much as possible. An occasional dose of the "Ewe Drench" will do good and tend to ward off Pneumonia and check all feverish symptoms. When a number of sheep or lambs are found coughing it rather points to *parasitic* bronchitis, and as such should be treated as on page 196.

DIFFERENT NAMES FOR SHEEP.

Agriculturists have applied different names to sheep according to their age and sex.

The male is called a *ram* or *tup*. While he is with the mother he is denominated a *tup* or *ram-lamb*, a *heeder*; and in some parts of the west of England, a *pur-lamb*. From the time of his weaning, and until he is shorn, he has a variety of names: he is called a *hog*, a *hogget*, a *hoggerel*, a *lamb-hog*, a *tup-hog*, or a *teg*; and, if castrated, a *wether hog*. After shearing, when probably he is a year and a half old, he is called a *shearling*, a *shearing*, a *shear-hog*, a *diamond* or *dinmont ram*, or *tup*; and, when castrated, a *shearing wether*, etc. After the second shearing he is a *two-shear ram*, or *tup*,

or *wether*; at the expiration of another year he is a *three-shear ram*, etc., the name always taking its date from the time of shearing.

In many parts of the north of England and Scotland he is a *tup-lamb* after he is salved, and until he is shorn, and then a *tup-hog* and after that, a *tup*, or, if castrated, a *din-mont* or a *wedder*.

The female is a *ewe*, or *gimmer lamb*, until weaned; and then a *gimmer hog*, or *ewe hog*, or *teg*, or *sheeder ewe*. After being shorn she is a *shearing ewe* or *gimmer*, sometimes a *theave*, or *double-toothed ewe* or *teg*; and afterwards, a *two-shear*, or *three-shear*, or a *four* or *six-toothed ewe* or *theave*. In some of the northern districts, ewes that are barren, or that have weaned their lambs, are called *eild* or *yeld* ewes.

The age of sheep is not reckoned from the time that they are dropped, but from the first shearing, although the first year may thus include fifteen or sixteen months, and sometimes more.

Cattle and sheep have no teeth in the upper jaw, but the bars or ridges of the palate, which thicken as they approach the fore part of the mouth, form a cushion or bed which takes the place of the upper incisor or cutting teeth, and partially discharges their function. The herbage is firmly held between the front teeth in the lower jaw and this pad, and thus partly bitten and partly torn asunder. The nodding motion of the head of a sheep is a sufficient proof of this.—*From Youatt's book on Sheep.*

ENEMAS, INJECTIONS OR CLYSTERS.

The above are used for various purposes, viz.:

1. For emptying the bowels.
2. For killing or expelling worms located in the rectum and large intestines.
3. For restraining Diarrhœa.
4. For nourishing the body when food cannot be given by the mouth.

The water or any other fluid used for the above purposes, should be a little above the temperature of the body, say 105 degrees Fahrenheit, and the best instrument to employ is

the "Simplex" Clyster Syringe. The nozzle of the instrument should always be oiled or smeared with soap before use, and the fluid injected *slowly*, taking care not to frighten the animal in so doing.

EWES BEFORE LAMBING.

Treatment.—A few days before lambing give a dose of the "Red Drench" or "Ewe Drench" in warm gruel, sweetened with treacle, to any valuable animal in full or gross condition, and this may be repeated according to circumstances. Should any of the ewes show symptoms of debility or low condition, separate them from the stronger ones at least a month before parturition, and carefully nurse, omitting the "Ewe Drench" but giving instead occasional doses of the "Gaseous Fluid" in warm gruel or skim milk. This will quickly restore the debilitated system to its natural tone, and give strength and animation to the ewe. The diet, in addition to the grass and roots, should be light and nutritious, such as peas, oats, beans, and a little sweet hay; also see that the drinking water is free from contamination. Avoid giving maize and frozen roots, also too much cotton cake, these being a frequent source of trouble. Both the "Red Drench" and "Gaseous Fluid" can be given as directed, with the greatest safety to the ewe, however far advanced in pregnancy.

EWES AFTER LAMBING, FEVERISH, Etc.

Treatment.—Immediately after lambing, give an "Ewe Drench," for by this simple treatment all inflammation and fever will be prevented, and the whole system of the ewe cleansed, thereby rendering her milk pure and copious for her young. If the ewes are debilitated or low in condition after lambing, omit the "Ewe Drench," and give occasional doses of the "Gaseous Fluid," with a small quantity of cake during the day. In some outlying lambing folds it is of the utmost importance to have a reliable medicine at hand for checking fevers and inflammation, as it is not always convenient to obtain gruels for giving the medicine. The "Vetalenta" will be found specially adapted for this purpose, for it safely

wards off all fevers and inflammatory diseases, is ready mixed for immediate use, and the exact doses are denoted on the bottle. Always give the lambs a little milk as soon as they are born.

EWES DYING FROM DISEASED LIVERS (Unassociated with Fluke).

Every year we hear of heavy losses amongst ewes in the Spring, owing to diseased livers, which on post-mortem examination have been found to be yellowish in colour, as if they had been boiled, and in a complete state of disorganization, so much so, that on the slightest pressure they break up as if quite rotten. Strange to say, none of the usual symptoms of the Fluke disease are exhibited, neither is there any trace of the Fluke parasite present.

Cause.—The above condition has been proved to be owing to an excessive supply of swedes or turnips, especially if they are allowed to remain about the pastures in a decayed state. In-lamb ewes will very often devour these remains most greedily, and, if so, serious losses must be expected at lambing time.

Treatment.—Immediately an animal dies examine the liver, and if found to be in the state above described, limit the supply of root diet to the rest of the flock at once and give drier food. By way of medicine give the "Gaseous Fluid" twice daily, in plenty of warm gruel for three or four days, then miss a day or two and start again in reduced doses, according to the severity of the case.

EWES WEAK AND EXHAUSTED AFTER BAD LAMBING.

Treatment.—Give the "Gaseous Fluid" either in gruel or warm ale twice daily, and a little sweet green hay and corn night and morning. Should there be any evidence of paining or straining, give the "Gaseodyne" instead of the "Fluid" twice daily as directed, and keep the patient quiet.

FLIES STRIKING.

The fly that produces maggots on sheep is very similar to the ordinary blue-bottle, but has a black speckled abdomen. These flies are very troublesome during the sultry months of the year, and in some cases their presence has caused serious loss.

They lay their eggs on any dirty part of the skin, such as the tail, or any sore, and it is here that they hatch out, producing maggots. Scouring animals suffer much



Fig. 82.
Fly, twice natural size.



Pupa Case,
showing place
of exit of Fly.

from these pests, and dulness, with loss of appetite, soon follows unless active remedial measures are taken.

Prevention.—We do not think we can do better than quote the experience of one of our Customers; he says:—“Your ‘Anti-Fly Dressing’ is exceptionally good for preventing sheep or lambs being struck with the Fly. I tried it on a number of animals after the maggots had been destroyed, and in some cases the inflamed patch was three inches in diameter, and I put the dressing on the raw flesh, thick with a paint brush. It seemed to hasten the formation of new skin, and quickly relieves the animal from further torture of the Flies which very often nearly drives them crazy, besides which they rapidly lose condition.” Nothing can equal a few doses of the “Kossolian Blood Salt” afterwards in the feed for regaining the lost condition. See also under Maggots, page 203.

FLUKE OR LIVER ROT.

Cause.—This disease is produced by a parasite named *Distoma hepaticum*, which invades the liver and its gall ducts, and is most prevalent during wet seasons, especially where the land is low and marshy. Rot, as it is commonly termed, makes its appearance during the Winter and Spring months, although the “Fluke” germs were most probably taken into the system in July or August previously. The years 1879 and 1880 were most destructive ones from this disorder. Fluke Rot has been said to exist in lambs before the latter have breathed the outer air, therefore this points to the germs

being conveyed in the blood of the dam. The fluke is bisexual, having both male and female organs on its body, and is generated from little eggs.

Symptoms.—In the earlier stage the animal will probably put on flesh rapidly, but this is only to be followed by loss of appetite and gradual emaciation. The wool loses its

brilliancy and drops off in patches, the muscles of the back become soft, flabby and pallid, and waste, and hence the name "razor-backed." The whites of the eyes assume a dirty-cream colour, the breath stinks, the belly is distended, and a swelling or bagginess presents itself under the jaw or cheek, commonly termed "jugged" or "bottled." Diarrhoea is often present.

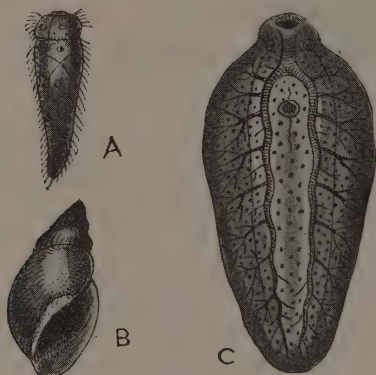


Fig. 83.

Stages in the growth of the Liver Fluke
(after Neumann).

- A. Embryo which passes with the dung. In low lying boggy land it finds its way to water where it finds the host.
- B. A small freshwater snail (*Limnaeus truncatulus*) into which it bores and becomes encysted. The snail wanders about on the wet grass, or is taken in with the drinking water. The parasite is liberated and find its way to the liver and becomes a fluke.
- C. The adult fluke is extremely prolific, as many as 7,400,000 embryos being found in one sheep.

nitrogenous foods, such as corn, beans, good hay, etc., and to administer a suitable medicine. As regards the latter, the "Salodyne" is without doubt the best medicine that Veterinary Science has discovered, for it acts as a safe preventive, inasmuch as it kills the embryonic enemy in the stomach, before it is able to reach its place of refuge in the liver in a more or less fully developed form. Small doses of the "Kossolian Blood Salt" do a lot of good if introduced

Treatment and Prevention.

As there is no known cure for Fluke when once the organisms are fully developed and established in the gall ducts of the liver, the only course open for the flock-owner is to delay the wasting process by feeding on rich, dry

in dry food, as it enriches the blood and is a good general tonic to the weakened system.

In all cases it is advisable to remove the diseased sheep from the infected pasture, and for preference a salt-marsh or dry healthy upland pasture is preferable. To counteract the great weakness it is advisable to give small and repeated doses of the "Gaseous Fluid," and in order to prevent the disease spreading, the infected lands must be thoroughly drained and overstocking avoided. It is of great benefit to dress the pastures with salt and lime, as it is destructive to the young fluke and adds to the quality of the grass; furthermore do not depasture any sheep thereon until after Christmas. The above treatment is best commenced early in the season, for it then kills the parasite in the summer months, thereby preventing its admission into the sheep's stomach whilst grazing.

FLY GALLS, SORE HEADS, AND SHEAR GALLS.

These sores cause sheep much suffering on account of the flies attacking them. Animals affected in this way should be attended to immediately the slightest wound is seen, or it will extend and cause much difficulty in curing, with consequent loss in condition.

Treatment. — Bathe and clean the parts first with a sponge and lukewarm water, and when dry, smear on some of the "Sulphuretted Ointment," and repeat the dressing daily for a few times. This ointment is safe and effectual, and will furthermore prevent the approach of flies. Give good food and an occasional dose of "Red Drench" if feverish. If the ointment above mentioned is not at hand, the "Anti-Fly Dressing" is equally efficacious.

FOOT-ROT (Non-contagious).

Causes. — This disease is essentially due to rank and moist pastures, and may be divided into two kinds, viz., contagious and non-contagious. The former commences at the top of the foot, working downwards, and is most prevalent during the Summer and Autumn, although it is occasionally met with at other times of the year. The Black-faced, or Downs, breed is very subject to these conditions.

Symptoms.—Lameness is, of course, one of the most marked signs of the disease, and if the affected feet be examined they will be found hot, tender, and swollen. The fore-feet are most commonly diseased. If the disorder be allowed to go unchecked, ulcers or fungoid growths appear, and the poor animal is obliged to crawl on its knees in quest of food, and consequently soon loses condition and strength.

Treatment.—Commence by penning off the diseased from the healthy animals, and then clean away all dirt and grit with a sponge or coarse cloth. Now cut away the loose



Fig. 84. Foot Rot,
A. Seat of Disease.

portions of horn (taking care not to cut too deeply so as to cause bleeding), paring it on a level with the sole and shortening the toe. Having proceeded thus far, the "Foot-Rot Oil" may be applied by means of a feather or brush, every fourth or fifth day as directed. It is advisable to let the animal rest upon its rump for a few minutes after using the remedy, for by this means you ensure it penetrating and taking proper effect. Afterwards place the sheep on some sharp fallow or dry paddock for three or four hours daily. Examine again on the second or third day, and if the crust still appears to separate, the knife must be again employed and the parts dressed as before. The great secret of successful treatment is to doctor the animals on *first symptoms*, otherwise the complaint becomes obstinate and difficult to overcome. If practicable, apply the "Foot-Rot Oil" or "Azodyne" (Ointment), on a *dry day*. In all cases the "Red Drench" is essentially called for, as it cools the system and purifies the blood, thereby hastening the healing process. In mild cases, a pledget of tow smeared with the "Oil" is all the treatment required.

Prevention.—Well drain the land and treat at once any animal that becomes attacked. Keep the blood pure and the system well fortified against disease by occasional doses of "Kossolian."

FOOT-ROT (Contagious).

This is due to a virus or by some authorities to a fungoid parasite, which finds its best chance to enter into the skin of the foot and to develop there. This form of Foot-Rot is easily distinguished from the non-contagious form by the rapidity with which it spreads to other animals in the flock and from one foot to the other.

Symptoms.—These are similar to the non-contagious form, but its first indication is moisture between the claws.

Treatment.—Thoroughly cleanse the part with warm water, into which pour a little of the "Globe" Disinfectant, then apply the Special "Foot-Rot Oil" as directed, or if an ointment is preferred use the "Azodyne." When the ulcer has penetrated into the substance of the hoof and the horn becomes detached, it is advisable to cut the latter away and to clean and dress the wound as described above. Should unhealthy granulations develop cauterizing with Nitrate of Silver is advised. It is sometimes noticed that although the wound has healed perfectly there remains a certain amount of lameness and tenderness of the feet, but this gradually disappears as the healthy horn grows over the wound.

GARGET, MAMMITIS, OR DOWNFALL OF THE UDDER (Ordinary form).

Causes.—This serious disorder denotes inflammation of the udder, which is usually caused by exposure to cold or from lying on damp pasture. It may, however, arise from not properly drawing off the milk at weaning time, or from too much milk, which causes "caking" of the udder. Unless prompt remedial measures are taken it may terminate fatally.

Symptoms.—Those chiefly noticeable are tenderness and swelling in or near one of the teats, the ewe becoming restless and feverish, and refusing to suckle her young. Sometimes clots of blood escape from the diseased teats, and the swelling and discoloration extend until half the udder is implicated, when it may look black in colour, hence the name "Black Udder," which indicates mortification. This mortification is more frequently met with in ewes than in cows, and invariably ensues if the disease is not promptly attended to.

Treatment.—Separate the diseased from the healthy, and give frequent doses of the “Vetalenta” * as directed. Clear the udder from all wool, and then bathe with hot water for ten or fifteen minutes, several times daily. Carefully dry afterwards with a soft cloth and then gently apply the “Chemical Extract” night and morning. If the udder has become inflamed and there is evidence of an abscess forming, apply linseed poultices, on which sprinkle some finely powdered charcoal, and when sufficiently ripe open with a lancet or clean knife in the lowest part, so as to secure a good drainage.

Keep the ewe on a spare diet for the first few days, such as bran with a little hay, chaff, or grass, and all lambs able to suck should be kept at the teats if possible, for it is most important that the udder be well stripped. In some cases the teat passage gets blocked up with the pus-like materials, or granulations to such an extent, that it becomes necessary to get these away, and for this purpose the best plan is to introduce the Teat Syphon, which will soon have the desired effect.

When lambs commence to feed in the pastures the ewes’ udder naturally becomes over distended with milk, which renders it liable to inflammation, or the ill-effects of a chill. Any inflammatory condition of the udder or teats causes the ewe to refuse to suckle the lamb, and this is a splendid opportunity to catch and carefully milk her. Following this anoint the parts with the “Udder and Sore Teat Salve” and give the “Vetalenta” as directed.

With convalescence give food of the best quality and occasional small doses of the “Gaseous Fluid,” provided all feverish symptoms have departed.

GARGET, MAMMITIS, OR BLACK UDDER (Septic).

Causes.—This is far more serious than ordinary Garget, it being due to a microbe called *Streptococcus*. The trouble commences in the teats and then extends into the milk ducts and other structures of the udder.

* If the bowels are constipated give a dose of the “Ewe Drench” instead, and repeat in half doses every third day until the bowels regain their normal state.

Symptoms.—Fever is invariably present, and the patient soon goes off her feed, and the udder and teats become hot and inflamed. Lumps quickly appear which eventually burst, causing the parts to turn dark red or black, due to mortification, hence the term “Black Udder.”

Treatment.—This disease being very contagious, far more care must be exercised in preventing its spread than for ordinary Garget. *Immediately* a case is observed, isolate the patient at once, for the ground and litter on which the animal lies is most likely to infect the healthy ones. The lambs from the diseased ewe must be weaned and removed from the mother, and all animals that have succumbed should be deeply buried and the “Globe” Disinfectant freely sprinkled about the lambing pen. Avoid the same shepherd handling healthy ones. All black or dead portions of the udder should be dissected or cut away with a perfectly clean instrument, and the wound dressed with the “Special” Udder Salve afterwards. The teats should also be syringed up with a solution of the “Globe” Disinfectant,* say one tablespoonful to one quart of tepid water once or even twice daily, this preparation being both antiseptic and disinfectant in its action.

GASTRO-ENTERITIS, OR ENTERIC FEVER (Not due to Parasites).

This complaint assumed alarming proportions in Cornwall and elsewhere some years ago, especially amongst Shropshire Downs, and quite 50 per cent. of the lambs died from the disease in a comparatively short space of time, especially where proper remedial measures were not promptly adopted.

Causes.—Anything taken in as a food or otherwise, causing irritation of the lining membrane of the stomach, is liable to produce this disease. Changing sheep from a poor innutritious pasture to a flush-growing land will also produce it, as will also feeding on patent oil cakes or meals containing the husk or beans of the castor oil plant.

A customer of ours had a serious outbreak amongst his lambs from placing them in a field of tares or vetches, which had been eaten close down. He moved half and left the

* If preferable, “Sanasol” Tablets can be had if necessary.

other half, but the tares commenced to shoot, and this caused the trouble, for 25 out of 30 died. The excessive rainfall of 1912 caused the surface of arable and grass lands to become impregnated with farmyard manure which had previously been ploughed into the land, and this led to other attacks.

Symptoms.—Lambs appear to be doing well in July and August, but towards the end of October deaths frequently take place. Loss of appetite, dulness, great thirst, rapid emaciation, intense and offensive diarrhoea, are the usual symptoms noticed, and some animals die very quickly, while others linger on for days. Post-mortem examination reveals the bowels to be much inflamed, especially in the small intestines, the ingesta there being of the consistency of pea-soup, with a very strong smell. The bladder is found to be full and inflamed, which is evidently due to the lambs crouching down to pass their water.

Treatment.—Remove the affected animals to a higher and newer pasture if practicable, and dose with the "Ovidyne," twice daily for a week; then skip a day or two and continue giving it every other day for a few times. To stop the scour give the "Curdolix" as directed, with a liberal supply of bruised oats, and avoid lambs drinking from stagnant pools. Do not force ailing animals with too much lamb food.

GID, STURDY OR TURNSICK.

Cause.—This is caused by "hydatids" on the brain, these being the cystic form of the tapeworm of the dog (*Tænia cœnurus*), which look like watery bladders, about the size of a hen's egg. These cysts often contain several hundreds of minute pin-heads which later develop into tapeworms. Some authorities say that Gid cannot exist without the presence of dogs to harbour the fully developed creatures, which are expelled in the dung on herbage and then swallowed by the sheep.

Symptoms.—The affected animal moves round and round in a circle, is dull, separates from its fellows, gradually loses flesh, and holds its head high in the air.

Treatment.—In the majority of cases it is far better to slaughter the animal as soon as the foregoing symptoms are noticed, as the flesh may be used for food. A case of

Trephining Instruments for removing the cysts can be supplied if necessary, but the operation should only be undertaken by an expert.

Prevention.—Keep the flock in good condition by an occasional dose of the “Ovidyne” or “Lamb Tonic,” and be careful to burn all the heads of sheep with cysts or “bladders” in them, so that they cannot be consumed by dogs.

N.B.—If dogs are known to be affected with tapeworms, they should be treated at once with our Worm Pills.

GREEN SKIT, SCOUR OR DIARRHŒA.

Cause.—This is often due to exposure or errors in dieting, such as a too liberal feeding on young grass, which soon causes irritation of the coats of the intestines.

Symptoms.—Profuse discharge of green-coloured fæces, sometimes tinged with blood, according to the severity of the case.

Treatment.—Change the pasture and feed on cotton cake, crushed corn, etc., for a short time, and give small and repeated doses of the “Gaseous Fluid,” say every four hours, as directed. In many cases it is advisable to commence by giving a dose of the “Ewe Drench” or “Balsamic Castor Oil,” so as to expel any irritating material in the bowels, in this way preparing for the “Gaseous Fluid.” Keep the patient warm and return to the usual diet very gradually (*see also* notes under Scour, page 211).

HEAD GATE IN LAMBS.

This usually occurs on high land, the ears are much swollen and skin gets very scurfy, especially along the spine where the wool becomes bleached and eventually falls off. Later on the ears gradually rot away and finally disappear altogether. Large numbers of lambs die from this terrible disease; but it is said that if a sheep recovers it renders him immune from all other troubles.

Treatment.—Immediately symptoms of this disease appear, smear the ears and all along the spine with the “White Chemical Extract,” twice or three times a week, and give the “Vetalenta” every third day, feeding on a very light diet.

HEAD STAGGERS OR APOPLEXY.

Cause.—This is brought about by high feeding, especially if there happens to have been a sudden change from a spare to a highly nutritious diet. It attacks sheep, especially in the spring of the year, when for fattening purposes they are having an increased amount of cake, pea or maize meal.

Symptoms.—Dulness, redness of the eyes, partial or perhaps total blindness, and sooner or later the animal falls unconscious to the ground and dies suddenly.

Prevention.—Seizures are too sudden to treat successfully, so immediately a case is observed, give a dose of the “Red Drench” to all the fattest sheep, and repeat in four or five days’ time. Feed on a light and laxative diet.

HOVEN OR BLOWN.

Causes.—This usually results from turning hungry sheep into a field of rich herbage such as young clover or succulent grass, etc., especially if heavy dew or hoar frost is on it. Frosted roots, or too many mangolds, are also liable to cause the disorder.

Symptoms.—By Hoven is meant the enlargement of the rumen with gas, from fermentation of the food; this is particularly noticeable on the left side. It is a painful disorder, and animals so affected reject both food and water. The distended belly causes difficulty in breathing, and unless the animal is quickly relieved, death rapidly ensues.

Treatment.—In all urgent cases where the animal is likely to be suffocated, a trocar and canula* must be used. Insert the trocar into the left side at a point equi-distant from the hip bone and last rib, and after withdrawing it replace same with the canula. This may be left in for hours. In ordinary cases, the “Gaseous Fluid” invariably makes a cure, if given either in warm water or, better still, in a teacupful of Linseed or Castor Oil. Repeat in ten minutes if relief is not obtained. As soon as the distension has been reduced get the bowels to act freely by a dose of the “Red Drench,” given in gruel and plenty of treacle. Careful dieting will be necessary afterwards, by keeping the animals on a scanty supply of green food for a few days.

* See page 133 under *Hoven or Blown (Cattle)*.

HOW TO DRENCH SHEEP.

A drench can easily be given as per illustration, or by placing the animal on his rump and holding him between the knees.

Sheep are easily choked during the administration of medicine unless care be exercised, and this is especially so if the animal be depressed and appears to resist the medicine.



Fig. 85.. Drenching a Sheep.

The administrator, finding that the medicine is running down, invariably pours it in as fast as it will run, forgetting that there are two tubes down which it may possibly pass. It is far better to waste a little of the medicine than to choke your patient. When drenching, keep the neck of the patient straight, and touch the roof of the mouth with the drenching bottle, before letting any of the contents go down the throat.

HUSK, HOOSE OR PARASITIC COUGH IN SHEEP AND LAMBS.

The sheep is, after the dog, the animal which most frequently harbours worms, and even supposing that no fatalities result, there is always a considerable loss in the *impaired condition of the carcase and quantity and quality of the wool*. Not only is a sheep infested with parasites *incapable of making improvement in return for the food consumed*, but the flesh already put on at considerable expense rapidly disappears. It has been remarked by an eminent helminthologist, "That if parasites were 'fair feeders,' their presence would not be so serious," for they do not take the food as it is swallowed, *but live upon the very essence and juices of the body which digestion has prepared*. Hence it is that these parasites rapidly undermine the strength of young animals, requiring so much nutrition. If mature animals were equally affected they would not be so soon robbed of health and strength, as it is a physiological

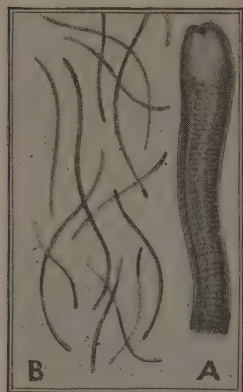


Fig. 86.
Strongylus filaria, or Lung Worm.
A. Head of Worm.
B. General appearance under microscope.

law that with the young of all animals absorption is more rapid and fasting more detrimental. *Let it be the rule, then, the first day young stock appear to lose rather than gain in growth and condition, to carefully examine them and ascertain, if possible, what is amiss.*

Every season of the year brings its special diseases, arising from the presence of parasites, and in some years, owing to the specially favourable climatic conditions for parasitic growths, the losses are far greater than usual, but there are two parasitic diseases of sheep and lambs, of which it may be said that "like the poor they are always with us," and these are Husk or Hoose and Tapeworm disease—the last mentioned, by way of indicating its importance and virulence, being termed "*The Lamb Disease.*"

Cause.—An essential to the prevention of any disease, and in like manner to its cure, is a knowledge of its cause, and in the case of a parasitic disease some acquaintance with the habits and life history of the parasite is necessary, in order that it may be attacked at the point of its least resistance. Parasitic Husk or Hoose generally makes its appearance from about September till December; but it may occur at any time of the year.

The disease is due to small thread-like worms (*Strongylus filaria*) finding their way into the trachea or wind-pipe and bronchial tubes of the lungs. These strongyles or parasites are whitish in colour



A



B

Fig. 87.

- A. Portion of Lung, showing the air passages almost choked up with worms, in various stages of growth.
- B. Lung Worm, with egg containing young worm.

and vary from $1\frac{1}{4}$ to $2\frac{1}{4}$ inches in length, and by their constant movement produce irritation, and set up inflammatory action, causing the animal to give out that half-choking, half-gasping cough, which is so diagnostic. Veterinary Science has not yet determined the complete life history of these worms; but it is generally understood that they breed and develop in moist pastures and marshy places. The opinion generally held is that the parasites are taken into the stomach with the food, and that the minute embryos pass from the intestines through the villi into the blood circulation, and in this way are conveyed to the lungs. Lung parasites are also found in older sheep as well as fat lambs; but this is owing to the fact that they have in all probability had suitable medicines administered, and thus have been enabled to withstand the ravages of the worms.

Parasitic Husk is often complicated by the presence of other worms, such as the *Strongylus contortus*, which infests the lining membrane of the fourth stomach and bowels and sets up an exhaustive diarrhoea or scour. If both these

parasites happen to be present in the patient, the matter is very serious indeed, for they cause great pain and induce the affected animals to drink large quantities of water. This causes rapid wasting away and very often death.

Symptoms.—The cough is a peculiar one, and becomes much more pronounced as the worms increase in numbers, and is invariably accompanied by great difficulty of breathing.



Fig. 88. A case of Parasitic Husk or Hoose.

As shown in the drawing, Fig. 88, the position assumed by the lamb during a paroxysm of coughing is very definite and characteristic, and can hardly be mistaken for any other disease. Panting and distress are observable, there is a thick discharge from the nose, and in the masses of mucus expelled

during the act of coughing, *numerous worms and embryos are found. This is the true diagnostic test of the disease.* As the symptoms become more acute, even though the appetite remains good, condition is lost, and the animal falls into a state of anæmia and invariably suffers from diarrhœa.

Treatment.—Separate at once all visibly affected animals, even those with a *slight cough*, and place them on a dry porous pasture if practicable; also see that they are comfortably housed at night and left without food. Next morning drench them with the “Broncholine” on an empty stomach, and let them fast for two hours afterwards. Repeat the dose in the same way on the second and third mornings, for if the disease is treated in this way the parasite (not being fully developed) is more easily destroyed, and there is less debility to contend against. *If the disease has obtained a strong hold of the animal it will be necessary to give the “Broncholine” oftener,**

* One of our customers, a man of practical experience, and who had many severe cases of parasitic Husk or Hoose to deal with, gives us the benefit of his experience in treating the disease. He says half measures are of no use at all; immediately he sees a bad case he gives the “Broncholine” every four hours the first day, perhaps two doses the second day, and three doses the third, according to circumstances. He does not fast the animals afterwards in very bad cases, as they require a lot of nourishing food frequently. The same person doses his animals as follows: he puts the proper dose into one of our “Gaseous Fluid” bottles, then fills up with milk, and, having well shaken the bottle, gives it slowly and cautiously.

say twice daily, for a week, and by the end of that time it may be safely expected that the strongyles are destroyed. When the "Broncholine" reaches the stomach and alimentary canal, it not only destroys any embryos or fully developed worms lurking about in these regions, but being rapidly absorbed by the blood, its vapour soon gets exhaled from the mucous membranes of the bronchial tubes by the breathing of the animal, and this means suffocation to the strongyles.

Diet.—It is most important to support the system of the affected animals by liberally feeding on the most nutritious food, such as plenty of linseed jelly and cake, gruels, bruised oats, peas, and a few swedes with some clean sweet hay, and see that a lump of rock salt is within reach, so that the animals can lick at will.

Prevention.—For many years stockowners have been anxiously inquiring as to the best means of preventing this disease, and with this important question before us, we have given the matter our most serious attention. It is thoroughly well known to those who have investigated outbreaks of parasitic Husk or Hoose, *that the weakest animals always go to the wall*, therefore it is important to keep the general condition of lambs up to the proper standard, so that they can resist the damaging effects of parasitic invasion. In order to obtain this result, practical experience tells us that all young animals should be dosed at a month to six weeks old, or *immediately after weaning*, whether diseased or healthy, with a medicine such as the "Ovidyne" or "Lamb Tonic." This preparation has a two-fold action, for it is not only destructive to the undeveloped or embryonic parasite, but it is one of the finest tonics or pick-me-ups that veterinary science has discovered. If a few doses of the "Ovidyne" are given as directed, the animal's system can easily withstand the attacks of disease, *and it is astonishing how rapidly young lambs put on weight afterwards*. It seems to give them new life and energy, and this at a small cost, seeing that they make far better prices in the market, and that all food goes to good account.

Prevent infected animals from drinking at the same place as healthy stock, and all lambs that have died from the above complaint must be buried.

As damp and moisture favour the development of the "strongyle," it is most desirable that all pastures be properly drained, and that young stock should be turned out *only when the dew is off the grass*. We strongly advise top-dressings of lime, soot, or crushed rock salt, the latter in the proportion of half a ton to the acre; for this process means death to the larvæ of the worms, and amply repays the agriculturist by the increased fertilization of the soil. This dressing should be applied in June or July, as the grass is then of less value.

IMPORTANT.—*It must not be imagined when giving the "Ovidyne" or the "Broncholine," that because no worms are seen to come away from the animal, that none are present, and that therefore the treatment should be discontinued, for both the "Ovidyne" and "Broncholine" kill hundreds in the intestines, which, becoming more or less digested, are not easily detected in the dung.*

The general dosing of lambs in spring and summer with the "Ovidyne" is now recognized by all noted breeders, as the most improved and highly satisfactory method that can be adopted, for preventing and expelling all parasitic germs, which, if allowed to remain unchecked, will, without doubt, develop into Parasitic Husk, Hoose or Cough, and Tapeworms, etc.

Care in Drenching.—As animals affected with Husk or Hoose are very liable to paroxysms of coughing it is as well to be careful in drenching them. Give the medicine gradually, or in nips, taking care to withdraw the drenching bottle immediately coughing ensues, or if there is the slightest risk of suffocation. Never hold the head on one side in drenching, but in a horizontal position.

INFLAMMATION OF THE LUNGS OR PNEUMONIA.

Causes.—This usually arises from a sudden chill or cold, often induced after shearing in cold weather. As a rule pleurisy is frequently associated with it.

Symptoms.—The patient separates from its fellows, loses appetite, becomes dull, temperature rises, and the breathing becomes hard or oppressed. In a short time a hacking cough appears, which becomes more and more distressing.

Treatment.— Comfortably house the animal, give tepid water to drink, into which pour a few doses of the “Vet-alenta,” or give it as a drench so as to check the feverish symptoms; after the fever has departed keep the strength up by doses of the “Gaseodyne,” given every four hours in bad cases, and relieve the cough by giving the “Cough Elixir” as directed.

INFLAMMATION OF THE WOMB OR UTERUS AFTER LAMBING.

This usually comes on from one to four days after lambing, and frequently affects the best ewes in the flock; furthermore, we find it following both easy and difficult parturition.

Causes.—Amongst these may be enumerated:

1. Improper diet.
2. Injury to the uterus during parturition.
3. Retention of the membranes.
4. Dead lamb.

(1) A full root diet, or any kind of food not adapted to the sensitive stomach (so prone to disturbance at this time) is imperfectly digested and assimilated, and renders the system, including the uterus, very liable to take on inflammatory action.

(2) A pregnant ewe may injure herself by coming in contact with some obstacle, such as a wall or tree, or in her passage through a narrow gate or entrance to a fold, when driven in a flock which is huddled together.

(3) Retention of the membranes. It is, unfortunately, not known to every shepherd that any portion of the membranes not expelled from the womb, prevents that organ from efficiently contracting, and so favours hæmorrhage.

(4) Dead lamb. In some instances the ewe is found on careful examination to have a dead or putrid lamb inside her.

Symptoms.—The ewe lies on the ground panting and straining, and exhibits the usual feverish symptoms. The bowels may be either relaxed or constipated, and the udder and external parts of the vagina are noticed to be red and

swollen. Owing to the excessive abdominal pain and consequent straining, a dark-coloured purulent discharge is expelled through the vagina.

Treatment.—This will depend upon the cause and symptoms of the complaint, but in all cases, however slight, separate at once the diseased from the healthy and see that rest and perfect quietude are insisted upon. Pains demand rest, they being significant of threatening danger, and these should be promptly met by appropriate medicines. Give a dose each of the “Balsamic Castor Oil” and “Gaseodyne,” mixed together in half a pint of warm gruel every three or four hours, or oftener if the symptoms are urgent. Foment the loins, udder and external parts of the vagina with warm water several times a day; afterwards encircling the loins with a double fold of warm flannel. Should manual interference be necessary the hand and arm of the operator should be washed clean and anointed with the “Carbolized Lambing Oil,” in order to prevent the introduction of any infectious discharges that may have been present in the delivery of any dead and decomposing lambs. Having carefully taken away the lamb, turn the ewe up and pour into the vagina one table-spoonful of the “Carbolized Lambing Oil” mixed with a teacupful of well-boiled starch gruel. This mixture should be slowly and cautiously injected by means of the Clyster Syringe, putting it about 9 inches into body or womb, night and morning, at a temperature of 80 or 90 deg. In some of the very severe forms of this complaint a small quantity of the “Gaseodyne” may be added to this mixture in order to lull the pain and calm the nervous system. In addition to this a few doses of the “Ewe Drench” or “Vetalenta,” every four hours, to keep the fever in check, should be given. Wash the hinder part twice daily with a solution of the “Globe” Disinfectant.

With convalescence allow a more liberal diet, with small and repeated doses of the “Gaseous Fluid,” which will soon increase appetite and help to build up the weakened system. Feed on sweet hay and a little corn, and for this purpose, oats will be found a most nutritious diet, a good milk-producer, and not over-heating to the system. By way of a change sprinkle the food occasionally with “Kossolian.”

JOINT-ILL OR JOINT FELON IN LAMBS.

Causes.—This is a septic inflammation of the joints due to the entrance of germs into the system through the open navel string soon after birth.

Symptoms.—The patient becomes feverish, is unable to stand, one or more of the joints swell, and great pain is evinced on pressure. If the joints are opened they generally contain a quantity of brown ill-smelling fluid.

Treatment.—Place the patient in a warm shed and foment the affected parts with warm water twice or three times daily, and after carefully drying, rub in gently a little of the “Chemical Extract” once daily. Give a dose of “Vetalenta” in a little milk and water every six or eight hours during the febrile stage and feed on a light diet such as oatmeal or linseed gruel to which eggs can be added. Small and repeated doses of the “Gaseous Fluid” will be necessary with convalescence.

Prevention.—Tie the navel string immediately after birth with a piece of cord dipped in either the “Chemical Extract” or the “Antiseptic Dressing.”

LAMBS LOOKING FULL AND WITH LOOSE WOOL, Etc.

About May, lambs are often noticed with the above symptoms, and, if not attended to at once, Cough and Scour rapidly set in.

Treatment.—Dose on first symptoms with the “Red Drench” on an empty stomach, and repeat on third day; after this give a few doses of the “Ovidyne” as directed, with better food.

LAMBS SUFFERING FROM EXPOSURE.

Treatment.—Give a dose of the “Gaseous Fluid” in a little gruel, place before a fire, and last thing at night give a dose of the “Alcoholic Ether.” A dose of the latter in gruel will quickly revive a lamb, especially if a little feverish. In carrying a weakly lamb back to the shed on a cold day keep its back to the wind; but if borne in the arms so much the better. The “Balsamic Castor Oil” should be at hand for costiveness either in the ewe or lamb.

LOSS OF MILK IN EWES AFTER LAMBING.

Cause.—This usually arises from the lamb, especially if small and weak, not taking sufficient milk.

Symptoms.—The ewe shows only a small contracted udder and teats, and only allows the lambs to suckle for a short time.

Treatment.—Change the diet and sprinkle all food with the “Kossolian Blood Salt,” this being one of the finest tonics and milk-producers. If at hand, give some crushed oats with the other food, such as linseed-cake or palm-nut meal. Again, pea-meal and lentils are good milk-makers, also scalded bran given warm and sloppy. The latter is very serviceable, and acts well in combination with the “Kossolian Blood Salt.” It is, of course, necessary to give a supply of mangolds or turnips.

LOUPING ILL, TREMBLING, OR STOMACH STAGGERS.

Cause.—This disorder is usually prevalent from the end of April to the commencement of June, especially during the prevalence of frosty weather, the grass at this time being hard and innutritious. Lambs are more liable to it than sheep, but in both the symptoms are the same. The cause has not been definitely made out; but the consensus of opinion points in the direction of infection, either arising from a curious formation of the soil or a condition of the grass which is noticed in certain localities and on certain farms. Louping-ill carries off annually a heavy percentage of lambing ewes, especially those with double lambs. Some authorities say the infection is due to a bacillus introduced into the system by the Grass Tick (*Ixodes*), but this seems very doubtful.



Fig. 89.
Adult Grass Tick

Symptoms.—In many instances the symptoms are fits and tremblings, the head being carried erect, and the eyes staring. This is followed by either partial or complete loss of power in one or both sides, producing a staggering gait.

Treatment and Prevention.—A cure is seldom effected unless the complaint is treated at the very onset with the "Loupodyne," so we strongly advise all shepherds to carry a bottle of this medicine about with them. Immediately an animal is taken ill, place it in a quiet, well sheltered and shady part of the field, but on no account let the patient be hustled. In bad cases it is better to treat the animal where found, as the shed or house may be some distance away. If the patient lingers on for a little time there is some hope of ultimate recovery. As a preventive give a dose of the "Red Drench," and follow on with an occasional dose of the "Loupodyne." Well dress the infected pastures with rough crushed salt, say 10 to 12 lbs. to the acre.



Fig. 90. Sheep with Louping Ill.

MAGGOTS.

These are the larvæ of the blow-fly, the *Sarcophagus carnaria*, and when sheep are attacked with these insects they are termed "Fly Blown" or "Struck." These Maggots are usually deposited on the soft and dirty parts of the body, such as the base of the tail, during May and June. A Fly may deposit as many as 20,000 eggs. Directly the eggs are hatched the young maggots commence to burrow into the skin, which causes intense irritation.

Treatment.—Secure the animal at once and clip off all the dirty wool; this done, apply the "Maggotine" freely as directed. This not only kills the maggots; but assists in healing the sores and protecting them from further attacks of flies. The old-fashioned treatment of applying Fly-Stone (Perchloride of Mercury) is a very dangerous plan to adopt and it has caused the death of many a valuable animal owing to its corrosive nature. See also page 183 under Flies Striking.

MEASUREMENT OF MEDICINES.

The following information taken from Finlay Dun's book on "Veterinary Medicine" may be useful to some of our

readers: "Common tumblers contain from 8 to 10 fluid ounces; a pint contains 20 fluid ounces; breakfast cups 6 to 8 ounces; tea cups about 4 to 6 fluid ounces; wine-glasses about 2 fluid ounces; tablespoons half a fluid ounce; dessert spoons 2 fluid drachms; and teaspoons 1 fluid drachm of 60 minims, or drops. Such measures, however, are only approximately correct."

APOTHECARIES' MEASURES OF WEIGHT.

- 1 Grain, gr.j.
- 1 Scruple, ℥j.=20 grains.
- 1 Drachm, ℥j.= 3 scruples = 60 grs.
- 1 Ounce, ℥j.= 8 drachms= 480 „
- 1 Pound, lb.j.=12 ounces =5,760 „

PHARMACOPŒIA MEASURES OF MASS.

- 1 Grain, gr.j.
- 1 Ounce, oz.j. ℥j.=437.5 grains.
- 1 Pound, lb.j.=16 ounces=7,000 grs.

MEASURES OF CAPACITY.

- 1 Minim, min. m.j.
- 1 Fluid drachm, f℥j.=60 minims.
- 1 Fluid ounce, f℥j.= 8 fluid drachms.
- 1 Pint, O.j.=20 fluid ounces.
- 1 Gallon, C.j.= 8 pints.

It is often useful to recollect the weight of different measures. Of water, one minim (m.j.) weighs nine-tenths of a grain; a fluid ounce at 62° Fahr. weighs exactly 437.5 grains, or an ounce avoirdupois; hence a pint is equal to a pound and a quarter, and a gallon to ten pounds imperial weight.

NAVEL-ILL IN LAMBS.

Cause.—As explained when dealing with Joint-Evil in Foals, the freshly severed navel-string in the newly born animals furnishes a point of entry for minute organisms, which find their way into the circulation and give rise to blood-poisoning, and the formation of pus or matter. These germs are widely distributed in farm-yards or lambing-sheds exposed to bad sanitary conditions.



Fig. 91.

Symptoms.—The animal appears dull and listless, refuses its milk and breathes rapidly. If the navel be examined it will be found to be hard and swollen, but sometimes it is open and discharging pus. In bad cases some of the joints swell, and if not treated abscesses form (see under Joint-Ill, page 201).

Treatment.—Isolate the affected animals and bathe the navel with warm water twice daily, afterwards drying with a cloth and anointing freely with the "Antiseptic Dressing" or, if this is not at hand, the "Brown Chemical Extract"

will answer equally well. In bad cases lay the swelling open with a knife and then dress as above described, releasing any pent-up matter; a flannel folded four or five times on itself wrung out of hot water should now be applied to the navel, keeping same in place by a bandage round the body. Give a dose of the "Red Drench" every third day, and keep up the strength of both mother and lamb with the "Gaseous Fluid," giving it once or twice daily according to the severity of the case.

Prevention.—Always tie the navel-string at birth, and both the ligature and remains of cord should be anointed with the "Antiseptic Dressing" so as to shrivel it up rapidly. All dead lambs, and the membranes in which they are born, should be immediately buried and covered with quicklime, and the floors of the lambing pen freely sprinkled with the "Globe" Disinfectant.

NOSTRIL BOT FLY.

The natural habitat of the Bot is in the nasal chamber, as depicted in the accompanying sketch, and during its stay in this situation it lives on the mucous membrane lining the

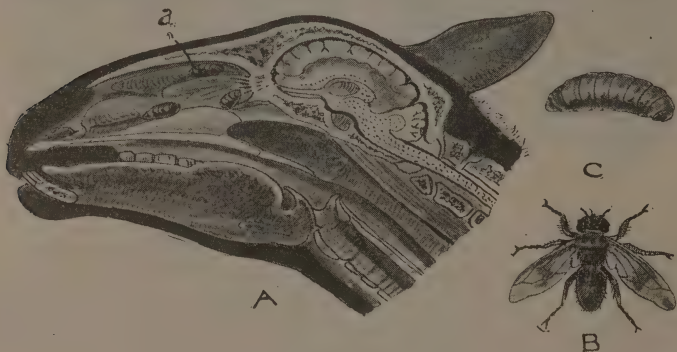


Fig. 92.

A. Section of a Sheep's head showing nasal passage.
 a. Nostril Bot. B. Sheep Nostril Fly. C. Maggot enlarged.

parts, and tenaciously attaches itself by little hooks growing from either side of its head. The Gadfly of the sheep (*Estrus ovis*) is a two-winged insect very much like the

Horse-Fly, and from May to July, in hot weather, the female is very troublesome and may often be seen buzzing about the sheep's nostrils anxiously awaiting the opportunity to lay her eggs on the inner margin of same. These eggs are soon hatched, and then the little Bots wriggle their way up the nostrils, traverse the nasal chambers, and enter the sinuses. Here they remain for nearly a year, before becoming fully developed.

When these flies are pursuing a flock in order to lay their eggs, the sheep become very terrified and keep their heads well down towards the ground so as to prevent the insects entering the nostrils.

Treatment.—Place the affected in a warm building so as to tempt the grub from the sinuses of the nostrils, and introduce a weakened solution of the “Broncholine,” which will cause their expulsion by sneezing. For those that you cannot do any good with in this way, the only plan is to have the bones of the face trephined by a qualified “Vet.”

Prevention.—Prevent as much as possible placing sheep in fields or other places where these flies abound, and smear their nostrils or faces with a little of the “Anti-Fly Dressing” occasionally.

PROTRACTED LABOUR.

In cases of this description one must not be in too great a hurry; at the same time, numbers of animals are lost owing to lack of elementary anatomy of the patient—this is particularly applicable to malpresentations. Do not rely too much on force; but in cases of dry labour in which the contents of the water-bag (*Liquor amnii*) has escaped and the ewe is completely exhausted through straining, then and not till then is gradual traction called for. The best rule to go by in malpresentation is to *put back* where there is plenty of room, and try and get the foetus into its normal line, which is with its head lying on the two fore-feet or legs.

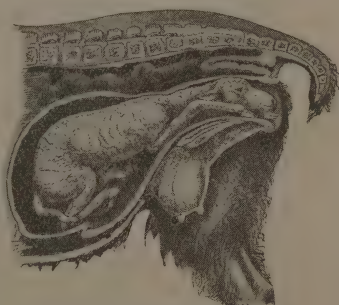


Fig. 93. Natural presentation.

PULSE, RESPIRATION AND TEMPERATURE.

The Pulse.*—The best place to take the pulse of the sheep is inside the forearm or thigh. The pulse varies between 70 and 80 beats per minute.

The Respirations are taken by the application of the ear alone, or with a stethoscope, over some part of the respiratory organs (nose, throat, windpipe or chest). Experience will only teach the different sounds that signify health or disease. The respirations vary between 20 and 30 per minute.

Temperature.—The introduction of the clinical thermometer affords the most valuable diagnostic aid to the

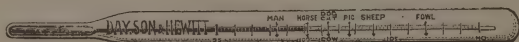


Fig. 94.—Clinical Thermometer.

stockowner, and places him at a great advantage over the old farriers of the past. The temperature of the sheep is usually taken at the anus, and is normally about 104° Fahr.

RED WATER.

Causes.—This is a dangerous disease which signifies the effusion of reddish-coloured water within the cavity of the abdomen, and arises from the increased secretion of the peritoneum, the membrane that covers the bowels and lines the walls of the belly. It is common in lambs after weaning, and is the effect of inflammation attacking sheep and lambs which have lain on the damp ground, and fed on rank herbage or indigestible turnips. Animals being fed too long on turnips is also a fruitful cause.

Symptoms.—Loss of appetite, with cessation of rumination, dulness, often attended with giddiness and constipation. The belly is enlarged and the breathing difficult.

Treatment.—Remove the animals to a dry pasture, and give them sound hay, corn, cake and a plentiful supply of water. In the way of medicine, give the "Red Drench"

* The frequency of the pulse and respirations, even in repose, greatly depends upon the temperature of the air, stable, or shed, and whether before or after feeding.

once or twice daily for two or three days, as long as the fever lasts, and then have recourse to the "Red Water Specific," as directed. If attended to early, this treatment will be successful, but if deferred, the mortality may be great. In severe cases, use injections of warm soap and water, and frequently apply to the belly flannels wrung out in hot water, after which rub with the "Chemical Extract." With convalescence sprinkle all food with the "Kossolian Blood Salt," in order to purify the blood and help on to condition; this preparation also acts as one of the best preventives if given once or twice a week.

RHEUMATISM OR SWOLLEN JOINTS IN RAMS.

Symptoms.—This condition was very prevalent during the years 1910 and 1911 and usually affects rams when about 10 months old. They are first of all noticed to be stiff and hot about the joints, especially the forelegs, and experience great difficulty in coming to the trough. Feverish symptoms are usually present. In consequence of this they lose flesh and go off in condition; but the bowels are seldom constipated, and appetite fair. As a rule the affected are found on yellow clayey pastures. Ewes appear to be immune from this affection.

Treatment.—Bring the affected animals into a warm shed if possible, and give the "Vetalenta" every six or eight hours according to the severity of the disease. As the fever abates give doses of the "Felon Drench" as directed, and, after fomenting the joints with warm water and drying carefully, rub in the "Brown Chemical Extract" once daily. Do not give any cotton cake but allow crushed oats, cut turnips, etc.

SCAB OR SHAB.

Cause.—This disease is the counterpart of Mange in the horse and dog, and is analogous to Itch in the human being. It is produced by a minute parasite, about the size of a cheese mite, termed *Psoroptes ovis*, which burrows beneath the skin. Scab is readily propagated by contagion, and is most prevalent in the spring and early summer.

Symptoms.—Excessive irritation, causing the animal to rub against any hard object, such as a hurdle or post, and on the shoulders will be noticed a dirty mark caused by the scratching of the hind foot. The wool becomes broken in consequence, and gives the animal a very ragged appearance. On examining the skin, little brown scabs will be noticed, surrounded by a red patch, in which the parasites are found; they can easily be seen moving about by the aid of a pocket lens.



Fig. 95. Sheep Scab Parasite.

Prevention.—If the farm is free from Scab insects, the flock can never have Scab, unless it is introduced from outside. Therefore never allow bought sheep to mix with the flock until they have been dipped.

Apart from the above, the constant use of a protective dip is the best preventive. The insects cannot live in a fleece that is protected by a good Arsenic Sulphur Dip such as Cooper's. The Carbolic dips have no protective properties.

Treatment.—This being a scheduled disease, Section 1 of the Sheep Scab Order provides that "Every person having or having had in his possession or under his charge a sheep affected with or suspected of Sheep Scab shall with all practicable speed give notice of this fact to a constable of the police force for the police area wherein the sheep so affected or suspected is or was." The Inspector of the Local Authority then makes all arrangements as to movements and disinfection. Section 7 provides for the treatment of the sheep, in the presence and to the satisfaction of the Inspector, with a Dip that has been passed by them. To ensure success the whole flock must be dipped again in about twelve or fifteen days.

A good deal of controversy has taken place regarding the interval between the first and second dippings. It has been found that the Scab insect may mature and lay its eggs within 10 days from hatching out, and it has therefore been contended that a second dipping must take place within 10 days to prevent a second crop of eggs being laid. But experience has shown that eggs hatching into an arsenically

dipped fleece either die or have their development so arrested that the breeding period is postponed, and for this reason a second dipping at the longer interval of 15 to 18 days



Fig. 96. A Sheep affected with Scab.

is found most effective. Any dipping with any preparation is a slight shock to the sheep, and in the interest of the flock it is better that it should be deferred, so long as it is kept within the safety zone.

SCOUR, OR WHITE SKIT, OR CURDING IN LAMBS.

Cause.—This condition usually affects lambs by over-engorgement of milk, unwholesome pens, chills due to exposure, etc.

Symptoms.—Swollen or drum-like abdomen, profuse white watery diarrhoea, weakness and general prostration.

Treatment.—Commence by giving a full dose of the “Balsamic Castor Oil,” so as to clear out all undigested food and break up the curdled milk with which the stomach has been unable to deal. After this follow on with either the “Gaseous Fluid” or “Curdolix,” as directed, which will have a soothing and anodyne effect on the irritated lining of the stomach and intestines. A dose of the “Gaseodyne”

can be added to either the "Gaseous Fluid" or "Curdolix," in very acute and painful cases. Sometimes it is advisable to give the ewe a dose or two of the "Red Drench," especially if it is considered that her milk is unwholesome, and as a consequence is causing scour in the lambs.

Sometimes the disease is cured by turning the ewes on to astringent pastures, giving them cotton cake, and supporting the strength of the ewe by a light and nutritious diet and the "Gaseous Fluid." In some cases it is necessary to take the scouring lambs from the ewe and to treat them with the above medicines, giving well boiled or skim milk and a little malt. Thorough disinfection of the lambing pens, etc., with the "Globe" Disinfectant is most essential.

SHEEP OFF APPETITE OR REQUIRING CONDITION.

Treatment.—Give a change of food, and let it be of the best quality, giving it little and often, such as small quantities of crushed linseed cake, a little corn, bran, etc., and small doses of the "Gaseous Fluid" in a little warm ale or stout. If the appetite is bad, sprinkle the food with the "Kossolian Blood Salt," once daily, for a week or ten days.

SORE LIPS, APHTA, OR THRUSH.

This is an important disease in sheep, for it often prevents animals feeding properly, and as a consequence they soon lose strength and condition.

Cause.—It is supposed to be due to eating certain kinds of food, such as vetches attacked with honey-dew, buckwheat in flower and seed, certain clovers, blight on tares, etc. Sore lips are most prevalent during wet seasons when lambs are put on second-cut clover, etc.

Symptoms.—On examining the inside of mouth, numerous blebs or vesicles are noticed filled with watery material, which burst and leave white looking ulcers. These vesicles, however, sometimes extend to the outside of the mouth, owing in all probability to it coming in contact with the infected herbage. If lambs with this complaint are affected, it often sets up inflammation in the udder of the Ewe, or causes sores on her teats, the affection being rather contagious.

Treatment.—Isolate the affected animals and give a dose of the “Red Drench,” twice or three times a week in some gruel and treacle, and feed on a light diet. For the sores, apply the “Sore Lip Salve” as directed. If diarrhœa sets in, as it often does, give a mixture of lime-water and skim milk; also a few doses of the “Curdolix.” The ewe’s milk must be drawn off regularly and rock salt placed about the pastures. There is a rather similar complaint to this due to parasites. *See* under Black Muzzle, page 174.

SORE TEATS.

Cause.—This generally arises from exposure to cold winds after the teat has become wet from the lamb sucking or from some obstruction in the teat such as milk stones, etc.

Symptoms.—The ewe objects to the lamb suckling, and the teats occasionally bleed from small cracks.

Treatment.—This condition is more often found affecting cows than ewes; but, when noticed, the lamb should be at once removed and the milk drawn off daily by means of a Milk Syphon. Give a dose or two of the “Ewe Drench,” and having fomented and carefully dried the affected parts, apply a little of the “Sore Teat Lotion,” as directed, which is most soothing and healing.

If the soreness of the teat is due to some obstruction this should be pushed up by means of the above instrument. This done the milk can be withdrawn.

Prevention.—Always milk gently with dry teats, especially during the winter, and should there be any Warts on them apply the “Wart Solvent” as directed.

STRAINING OR HEAVING AFTER LAMBING.

Cause.—Insanitary conditions of the lambing pen, bad management of the ewe during gestation, or absorption of septic matter into the blood stream, through wounds inflicted during parturition. If sanitary precautions are neglected it assumes quite an epizootic form, and is by no

means always associated with bad lambing, for we see it frequently after natural or easy parturition, where no particular cause for its appearance can be defined.

Symptoms.—Fever, loss of milk, discharge of dark fluid from the vagina, with straining and abdominal pains.

Treatment.—When Straining or Heaving after Lambing has appeared in the lambing pen, the greatest care is necessary to prevent its extension. Animals that are, or have been, attacked should be at once hurdled off from the rest, or better still, removed altogether, and on no account should the shepherd pass from one ewe which he has assisted in lambing to another, until his hands have been thoroughly washed and disinfected with the "Carbolized Lambing Oil." See also under "Inflammation of the Womb," page 199.

Mr. F. Sidney Hosegood, Middle Lambrook Farm, South Petherton, Somerset, writes as follows:—

"This year we have had a lot of trouble in lambing our ewe hogs, which are in a very high condition, and we have had a great many "heave" or "bend" a few hours after lambing. Some time ago I was recommended to try your "Gaseodyne," which I found most effective and have not lost one from this cause since. I am writing you this (which you are very welcome to use if you like) so that other flockmasters may be induced to use it."

TAILING OR DOCKING LAMBS.

Some breeds, particularly the Somerset and Dorset, are left with their tails long for the protection of the genital opening and udder against flies, etc. As a rule, however, tailing takes place soon after birth, especially with the female lambs, and the male is operated upon when castrated. The skin of the tail is drawn well towards its root or base, and then cut through by means of a strong pair of scissors or sharp knife, at the second or third joint from the rump. After this anoint the stump with the "Antiseptic Dressing," once daily, and keep clean. If bleeding persists tie a piece of cord, steeped in the "Dressing," round the tail, but remove same about eight hours afterwards.

THE LAMBING PEN.

Ewes go on an average about twenty-one weeks from the time they are put to the ram; but this may vary with the age and constitution of the animal. Labour becomes prolonged with cold weather, but normally it may be said to take from three to four hours, although in bad cases it lasts much longer.

Let the lambing fold be situated upon some dry pasture, if possible near the farm. It is best constructed of thatched hurdles placed closely together; in this way shelter is obtained from cold winds and rain. The same site should not be used for two successive seasons. Provide plenty of room to avoid over-crowding, and to admit of exercise, both of which are most essential. It is an advantage to have divisions in the fold, so that those in labour may have a separate compartment from those which have lambed. The shepherd's house is best placed adjoining the fold, in order that he may be in readiness at any moment to render assistance. Dogs should not be allowed to chase the ewes. We must here point out the desirability of having what may be called a "Hospital Pen" separate from the others, in order that bad cases may be isolated at once, and treated accordingly. This should, if possible, be paved, and kept as clean as possible, freely sprinkling the "Globe" Disinfectant about, after every bad case, in order to arrest the development of septic germs. Earthen floors should be avoided, as they freely absorb animal matter, and after a time become stenching, thereby giving rise to disease.

No lambing pen is complete without two or three Pro-lapsus Clamps (West's), for, applied in time, they will certainly save life, in cases of eversion of the uterus, etc.

All motherless lambs should be put to the ewes that have lost their young; this is generally done by confining them together in a small pen for a few days. A little sugar added to cow's milk makes it more wholesome for lambs, and, of course, the richer the milk the better.

When the lambs get strong enough, they and their mothers should be placed on some fresh "seeds" or grass pasture, when by the addition of other generous food the ewe's milk will be increased, and as a consequence the lambs will grow rapidly.

TICKS, KEDS, AND LICE.

There are three distinct groups of parasites which infest the skin of the sheep, and these are particularly numerous in the Spring and early Summer.

Ticks have acquired an importance in ovine pathology, inasmuch as they are said to be the means of transmission in some countries of certain diseases akin to Red Water, Louping-ill, etc., their extinction, therefore, becomes a matter of great importance.



Fig. 97. A true Tick.

The female Tick, after gorging with blood, falls to the ground and rests there for a time before commencing egg-laying, which varies from a few hundred to many thousands. This operation completed, she soon dies. In due course the eggs hatch, and the minute *larvæ* climb to the tips of grass or herbage, where they await the opportunity of attaching themselves to some passing animal. Having found a suitable victim, the *larvæ* engorge themselves with blood and then moult their skins, the second or *nymphal* stage being the result.

These nymphs attach themselves to the same, or a new host, and, when fully developed, undergo a final moult from which the sexually mature male and female Ticks emerge.



Fig. 98. The Ked.

Keds are parasitic flies, which, as a result of degeneration, have lost their wings. They bring forth their young as *puparia*; that is to say, the eggs develop in the body of the mother, within which the maggot stage is passed, and that which emerges from the egg is practically the mature adult.

Lice are small insects which, by the extreme irritation of their bites, often cause serious loss of condition; but unlike Ticks, they remain on the infected animal through the various stages of development. As the female lays her eggs she attaches them, by means of a glue like substance to the hair or wool of the host, these eggs being commonly termed Nits. So firmly are these eggs cemented to the hairs that the empty shells may often be seen many weeks after they have hatched.

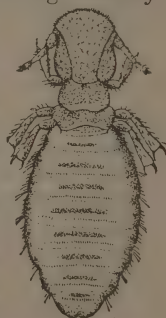


Fig. 99. The Louse.

Prevention and Treatment.—From the foregoing it is evident that methods of prevention and treatment must be adopted in accordance with the peculiarities of the life-history of the parasite. For instance, in the case of parasites which remain continuously on the host, such as Lice, etc., “Dipping” is about the best treatment for freeing animals until the following Spring. It is sometimes, however, a good plan to dip the Ewes before shearing, so as to prevent the lambs becoming infested. If only a few sheep have Ticks or Lice, etc., the “Sulphuretted Ointment” will be found very efficacious if repeated in a week or ten days, so as to kill the young that may have hatched previous to the first dressing. Always give good food as these parasites are very debilitating, being blood suckers. Should a lotion be preferable, make a solution of the “Globe” Disinfectant, say one part to 50 of water; but in bad cases this may be used stronger, viz.:—one part to 40 (one ounce to two pints of water).

VINQUISH OR PINING.

Cause.—This serious complaint usually affects two-year-old sheep, and is very prevalent on land situated on granite, or pastures containing an excess of astringent grass. It is a similar complaint to what is termed “drying up” in Westmorland.

Symptoms.—Dulness, drooping ears, constipation, bluish appearance of wool, and gradual or rapid wasting away. The affected animal dies within six or eight weeks unless prompt remedial measures are taken. This complaint may affect a few sheep or the entire flock.

Treatment.—Remove the affected animals at once to another pasture containing more succulent grass, such as clover, and give a dose of the “Ewe Drench” every third day, for two or three times, or until the bowels have regained their normal condition. Let the diet be light and laxative, such as roots, linseed gruel, etc., and in about a week’s time give small and repeated doses of the “Gaseous Fluid” in plenty of good oatmeal gruel, so as to brace up the debilitated system.

WATER STOPPAGE IN RAMS DUE TO CALCULI.

Cause.—In rams the urine passage and vermiform process (or worm) situated at the end of the penis, is frequently blocked up by calculi; especially if these animals are fed too largely on a highly stimulating diet with an abundance of mangold-wurzels, or turnips grown with superphosphate alone. The Cotswold, as a breed, appears to be more predisposed to this complaint than others; but, strange to say, sheep kept solely on grass are scarcely ever affected. Chemically these calculi consist of carbonate of lime and magnesia, with a large amount of ammonia phosphate of magnesia.

Symptoms.—The animal is noticed to be in great pain, straining and pressing to pass urine, which, if not liberated, permeates the system, causing uræmic poisoning and death. As a rule the body swells and colicky pains are present.

Treatment.—In mild cases throw the animal on his rump, and foment the parts with warm water, snipping off the wool and any small calculi that may have formed around the end of the penis. Also remove any gravel choking the orifice, by careful manipulation with the finger and thumb.

The application of a little of the "White Chemical Extract" to the parts, once daily afterwards, will be beneficial. Always give a good dose of the "Balsamic Castor Oil," and if pain is exhibited add a dose of the "Gaseodyne" to it. Later on, with convalescence, give a dose or two of the "Alcoholic Ether" last thing at night.

Change and vary the diet as much as possible, and let the flock have free access to water and plenty of exercise. With rams and wethers it is usual to draw the parts and cut off the vermiform appendage; this done, squeeze out the deposit through the opening. Sometimes, however, a free incision has to be made underneath the "worm," by means of a sharp knife, just sufficient to force the obstruction or calculi through. The wound should be treated afterwards with the "Chemical Extract." The operation on the ram in no way interferes with him as a stock getter.

Prevention.—It is said on good authority that when wethers are folded on turnips and get water stoppage, the best preventive consists in placing branches of the common fir tree over the field. The animals eat the bark, and this prevents the formation of crystals which go to form the calculi,

WEANING LAMBS.

This requires the greatest care, for the rich milk of the ewes being suddenly cut off, frequently means loss of condition to the lambs at the most delicate time of their existence. Before lambs are actually weaned, try and get them to take a little dry food, such as oats and cotton cake, and by the time their mothers are removed a full supply can be given. At this stage let them out on a young, sweet pasture with plenty of room for them to move about in. If possible, avoid placing them on pastures that have been grazed by sheep during the same season, for this is a fruitful cause of parasitic disorders, and may prove most disastrous. A dry, sound land is essential, but see that the grass is not too long or coarse. This is the time to give such a medicine as the "Ovidyne," for it acts as a good, sound, reliable, tonic to all those showing signs of weakness, for between weaning time and late autumn is a very critical time with these animals. Flesh lost at this period is never properly recovered, and they are thus unable to withstand the hardships of winter. Ewes must be fed very scantily until their milk becomes gradually diminished, and those udders that become painfully distended should be anointed with a little of the "White Chemical Extract" daily, and the milk drawn off frequently, or garget is liable to set in. In feverish cases give a few doses of the "Vetalenta" as directed.

"WETHER OUT," OR EVERSION OF THE VAGINA OR BEARING.

This usually occurs before parturition, and is occasioned by debility or want of condition, and sometimes becomes chronic.

Symptoms.—It appears as a small rounded mass at the vulval opening, but must not be confounded with eversion of the uterus, for in this latter cavity the lamb is contained.

Treatment.—The vagina must be carefully cleansed with warm water and then returned to its proper position. After this apply a West's Clamp, which is an instrument provided with about six sharp spikes and is used in order to control the effects of straining. The clamp is used as follows: Having removed the screw of clamp, open the hinged frame and embrace the entire thickness of the lips of the vulva. This is pierced by the sharp points and then closed again, the

screw providing for security and the requisite degree of tightness. This operation does not injure the ewe, and it can be so adjusted as to permit a free escape of urine, without allowing anything else to pass. The patient must, of course, be carefully watched and the clamp removed when lambing commences. Drafts from good flocks often contain a number that have suffered from the above trouble, and they are very liable to it again during the next pregnancy. Feed on a light, nutritious diet, and give the "Gaseous Fluid" once or twice daily in warm gruel. As a further preventive, pack the hind quarters as high as it is comfortable to place them.

WOOL BALL IN SHEEP.

This is a very common complaint in Ireland, by which thousands of animals are lost annually, and is especially prevalent amongst the long-woolled flocks when suffering from indigestion, or in poor condition and short of milk. The stomach of a sheep is divided into four compartments, and the wool-ball generally lodges in the fourth or true stomach, blocking the outlet from stomach to bowels. This causes acute pain and inflammation. On opening the stomach after death, three to eight small lumps of a cheesy consistence, which indicates partly digested food held together by strands of wool, varying in size from a hazel nut to a bantam's egg, are

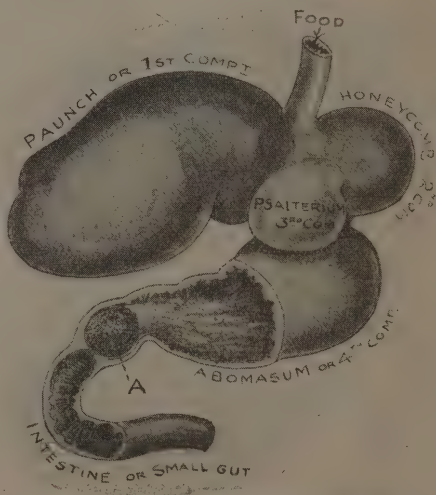


Fig. 100. External view of the Stomach.
A. Hair Ball blocking entrance to small gut.

which indicates partly digested food held together by strands of wool, varying in size from a hazel nut to a bantam's egg, are

found. It is a curious fact that if twin lambs are affected the strongest one usually dies, and the remaining one lives in spite of its getting more milk.

Cause.—These wool-balls are usually caused by lambs licking or sucking one another or their mothers; also from an accumulation in the stomach of the fine hairs of clover, etc.

Symptoms.—The affected animal stands with its head drooped, looks dull, eyes deep set, stomach distended, loss of appetite and giddiness. After a while it lies down, and dies in a few hours unless active measures are taken.

Treatment.—When an animal has the wool-ball fully formed and blocking up the entire passage, nothing can be done to make a permanent cure; but if it is just forming, then the "Solvax" will be found effectual if given as directed.

It is advisable in the majority of cases to commence with a full dose of the "Balsamic Castor Oil," as this not only facilitates the expulsion of the wool-ball, but relieves all irritation that is present. A dose of "Gaseodyne" can be added if the sheep is in pain.

Never put lambs where a lot of sheep have been, for there is bound to be a certain quantity of stale wool about on bushes, etc., which is readily eaten by these young animals. Give ewes plenty to eat, and look well after the collecting of all loose wool.

In cases where wool-balls are suspected, it is advisable to drench lambs with the "Solvax" as a preventive. It is both cheap and efficacious, and has the advantage of being mixed all ready for use, which is a great advantage should the pen be situated some considerable distance from the house.

WORMS.

The parasitic diseases of Sheep are amongst the most frequent and serious maladies to which these animals are subjected; and seeing that their ravages are becoming more alarming every year it behoves flockowners to pay greater

attention to their extermination. Amongst the most important parasites of Sheep may be mentioned, viz.:—

1. *Strongylus filaria*, or Thread Lung Worm.
2. *Strongylus contortus*, or Stomach Round Worm.
3. *Tænia expansa*, or broad Tapeworm.
4. *Tricocephalus affinis*, or Whip Worm.

1. Strongylus Filaria.—This minute thread worm is treated under Husk or Hoose, page 194.

2. Strongylus Contortus.—This is often termed the twisted strongyle and is red and white in colour, marked like a barber's pole and found principally in the fourth or true digestive stomach, technically known as the Abomasum or Rennet. It may,

however, be found in various portions of the gut, and causes terrible havoc during the winter and early spring both to sheep, goats and cattle. The colour of the worm varies according to the amount of blood in its intestines, hence it is frequently spoken of as the Red Worm. In bad cases millions have been seen in the stomach of one lamb. The late Professor Cobbold considered these parasites as veritable leeches, for by means of hooks attached to their heads they are enabled to hold on to the mucous membrane of the stomach for some considerable time. Later on they fall into the stomach, where reproduction takes place and the eggs are expelled. After undergoing a further change, they are again taken

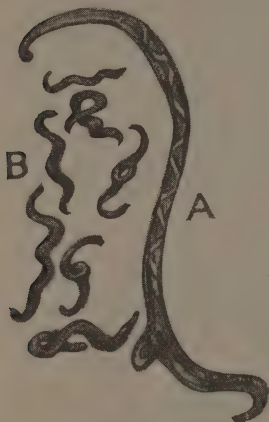


Fig. 101.

- A. *Strongylus Contortus*
(greatly enlarged).
B. Adult males and females
(natural size).

up by other lambs through the drinking water or pastures. These worms are small, being about 1 inch long; the male being smaller still.

Symptoms.—Affected animals rapidly lose condition, have a swollen condition of the under-jaw, great thirst, and the fæces are brown, and very offensive in smell. Sometimes the

diarrhoea is slimy and contains blood; if so death soon supervenes. The appetite is variable, and the skin and lining of the eye sockets are very pale or anæmic. As many as 180 Hampshire Down cross-bred sheep (grass fed) have been known to die out of 220.

Treatment.—Affected animals should be brought in and fasted from the evening before till 10 o'clock next morning; then give a full dose of the "Broncholine." Repeat this for three or four days in succession (without the fasting), and again in a week or ten days if necessary. When giving the "Broncholine" always add a full teacupful (say 4 or 6 ounces) of gruel or milk to it, because a smaller quantity than this is not so liable to get into the fourth stomach where the parasites are generally found.

Prevention.—Remove sheep into clean pastures every two or three weeks, and sprinkle the food twice a week with the "Kossolian Blood Salt."

3. *Tænia Expansa.*—This is the most important and disastrous of ovine parasites, and seems to become more and more prevalent every year; indeed, this is bound to be the case until better methods are adopted to secure the complete destruction of the worm or its segments. This subject is a very serious one for the flockowner, and, unless proper remedies are resorted to at the outset, sheep never put on the proper amount of flesh and wool, and inevitably die a lingering and painful death.

It is simply astonishing to find the ignorance displayed by some breeders when discussing parasites in sheep; they seem to take it for granted that prevention is impracticable and the cure impossible, and it is only when confronted with *undeniable evidence* that they cannot help being convinced.

Cause.—This disease is generally due to over-sheeping on old turf land, and is most prevalent from *January to May*, and, strange to say, is seldom noticed on arable land where sheep are hurdled. It is said that the parasite takes from six to ten months to mature. In Australia about 87 per cent. of the sheep and lambs are infested with this worm, and very nearly the same percentage of our animals are unquestionably in a like condition. It is quite possible that at the outset there may be

no parasites visible to the naked eye in the faeces; but a hand-lens or magnifying glass will quickly reveal their presence in a more or less incomplete state.

Dr. Cobbold used to describe a tapeworm as a chain of zooids or individualized creatures linked together in a single file, each of these zooids or segments being supplied with male and female organs, and capable of producing from 30,000 to 35,000 eggs!!! Sheep harbour several different kinds of tape-

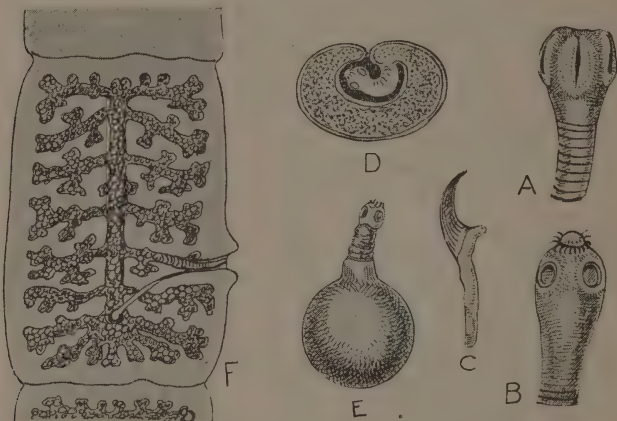


Fig. 102.—Stages in the development of the Tapeworm.

- A. Represents the head of the *Tænia expansa* of the cow and sheep. It will be noticed that the suckers are in the form of slits and that there are no hooks.
- B. Represents the Head of the Tapeworm of Dog *Tænia serrata*. The suckers are circular and there is a prominent circle of hooks whereby it attaches itself to the internal lining of the intestine.
- C. One of the Hooks enlarged.
- D. The Egg of the Tapeworm, which, when swallowed by the sheep, becomes encysted in the mesentery in the form of bladders as E.
- F. Shows one joint of the Tapeworm. It will be seen that it is almost entirely occupied by the uterus or egg receptacle. The opening at the side allows the Tape eggs to escape into the intestine.

worm, but the special and largest one that does so much damage in this country is the *Tænia expansa*, a name given to it because the width of its segments greatly exceeds the length. The total length is variable, but it frequently exceeds 15 feet, even in lambs, and easily fills a half-pint measure. Some specimens have as many as 7,000 segments, which they

are daily giving off. It is highly probable that the animal takes up this worm with the grass whilst at pasture.

The complete evolution of the tapeworm has so far not been definitely made out, but that it has similar conditions of development to those of other worms, and that moisture favours the preservation of its germs, is certain. The head is very minute and supplied with suckers, and this, together with the first segment, is the most important part to get expelled, for the latter is said to act as the nurse to the remainder. The first segments are soft and narrow, each becoming broader, longer and more distinct, as the distance from the head is increased. When the parasite has attained maturity, the last segment separates, then the next, and so on—all in course of time being passed with the dung. These segments are full of eggs that retain their vitality under favourable conditions, such as moisture, etc. Tapeworms have often been found many feet in length, *even in lambs with their mothers*, but they do not become infected through the milk, as some have supposed, but infest themselves by picking about here and there at the herbage. Although tapeworms are invariably found in the intestines of sheep at all times of the year, it is among lambs in the summer and autumn that they cause such serious derangement as to prove fatal, owing to exhaustion following the diarrhœa.

Symptoms.—The earlier symptoms of the disease are often overlooked, or maybe the animals are thought to be a little out of sorts, until diarrhœa sets in, when the segments of the worm are freely passed. After a heavy fall of rain the washed soil often exposes these segments in the dung, as depicted in drawing. It is always a good plan to carefully examine the intestines of a dead lamb

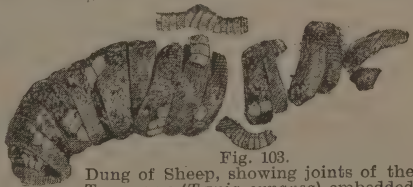


Fig. 103.
Dung of Sheep, showing joints of the Tapeworm (*Tania expansa*) embedded in half digested food.

for any evidence of worms, for, if found, this furnishes the clue to what is wrong with the others. It often happens that a flockowner finds that his lambs put on flesh very rapidly soon

after birth, and then there is a gradual falling off in condition. This being the case, separate those showing the slightest signs of the complaint and give each a dose of the "Ovidyne" or Lamb Tonic, for Tapeworms are unquestionably at work, and are feeding on the juices of the body, which should go to build up a sound constitution.

Treatment for Destroying fully Developed Tapeworms or Embryos.—Although the foregoing preventive treatment with the "Ovidyne" is calculated to achieve the purpose indicated, it very often does far more than this by expelling tapeworms in a more advanced stage of development, provided the usual doses are increased. On the other hand we must point out that when an animal harbours *fully* developed parasites the use of "Broncholine" is unmistakably indicated, as it is a little more powerful in its action than the "Ovidyne." In order to prepare animals for dosing it is as well to shut them in a yard or shed overnight, or to pen them on a bare place where there is nothing to eat, and then dose them in the morning on an empty stomach. By adopting this plan the medicine stands a far better chance of coming into direct contact with the parasites than is the case when a large quantity of food absorbs some portion of the medication. This dosing should be repeated for two or three days, and sometimes it is a good plan to follow it up with a dose of the "Ewe Drench" so as to expel the dead and dying worms. The shutting of the affected in a bare yard facilitates the collection of dung and worms that may be passed which should be burned or treated with quicklime. *Do not allow any food or water for three or four hours after drenching, if practicable.* In cases where diarrhoea is severe, the "Curdolix" must be employed occasionally in addition to the "Broncholine," and as a rule it is best given last thing at night.

Preventive Treatment.—This, to be successful, must be resorted to in the very *early stages*, for the embryos and partially developed worms are then more vulnerable to the medicine, and naturally the animals harbouring them are less debilitated and exhausted. For this reason, then, early dosing with the "Ovidyne," even to those apparently healthy, is of the greatest moment, and practical experience tells us that lambs and calves do best that are drenched *immediately after weaning.*

It is advisable to fast the animals overnight and give the "Ovidyne" *first thing in the morning*, prohibiting all food for two to four hours afterwards. Repeat the dose on the third day and again at the end of the week, according to the severity of the outbreak. It should be distinctly understood that there is no risk in giving this medicine even supposing that no worms are present (and this is extremely improbable), for the "Ovidyne" is one of the finest tonics or pick-me-ups that veterinary science has brought to light. Lambs make wonderful progress after its use, and the stimulus it gives to the wool and formation of flesh is soon noticeable. Being made up ready for immediate use it can be employed on outlying farms with the greatest ease, for no gruel or water is needed, the bottle measure being all that is necessary as a drencher. The general dosing of lambs in spring and summer is now recognized by all noted breeders as the most improved and economical method that can be adopted, for it not only frees the intestines of all parasitical germs, or embryos and young worms, but in doing this, high condition and a sound constitution is assured, so that far better prices are obtained. A simple test, so as to corroborate this statement, is to get a few lambs, and having drenched them as directed, ear-mark them, and in a few weeks' time note the difference between these and the others not so treated.*

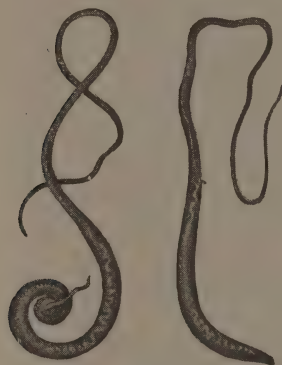
Lands fairly safe for cattle are often dangerous to sheep, this being owing to the latter feeding closer to the ground. Lambs should be kept away (particularly in wet weather) from pastures notoriously unsafe, and it is of the utmost importance to immediately burn the carcass of any animal known to be infested with worms. Whenever possible (it is idle to think of

*Mr. Jno. Wood, Estate Office, Brandsby, Easingwold, who has been conducting experiments in connection with "Parasitism in Lambs," writes the following letter:—"I have much pleasure in stating that the results of my drenching lambs with your 'Ovidyne' were most satisfactory, as the following figures will show. We drenched the lambs three times, once a week; the increase of weight and general look of the lambs were quite wonderful, especially as the lambs were 10 of our very worst and were finally sold amongst 100 others, and prices were quite up to the average. Total weight of lambs as follows:—1st Drenching, 418 lbs.; 2nd Drenching, 488 lbs.; 3rd Drenching, 498 lbs. This represents a total gain of 80 lbs. in two weeks, or 8 lbs. per lamb. You may rely on what I have told you to be correct. The figures look very big, but I can assure you they were very carefully and accurately taken."

it in the majority of cases) infected pastures should be ploughed up or top-dressed with powdered agricultural salt when the worms are known to be on the land. Salt is a most powerful germicide, and few, if any, low forms of animal life can survive contact with it.

In certain districts our customers rely implicitly on the "Kossolian Blood Salt" as a preventive of Tapeworms in Lambs. They sprinkle it amongst the food twice or three times a week, and continually change the mode of dieting, but when lambs are known to be infested it is no use picking out those that look very bad, for it is far better to dose the lot.

4. Tricocephalus Affinis.—This worm is very similar to the *Oxyuris curvula* of the horse; but the tail will be noticed to be more filiform or whip-like. It is found in the sheep,



A Fig. 104. B
Tricocephalus Affinis.
(After Neumann.)

A. Male. B. Female.

goat and ox, and attaches itself to the mucous membrane of the cœcum by its head, and rolls the rest of its body spirally into a ball. Both the male and female measure from 2 to 2½ inches, and it only takes about a fortnight from the time the eggs are taken into the host till they become more or less mature parasites. The head of the worm is situated at the thread-like end and is very minute. These worms are invariably seen in emaciated sheep, which are also probably the host of numerous other varieties of parasites.

Symptoms.—These parasites cause severe diarrhœa, and great debility to the host, as they are blood suckers, and unless active measures are taken, death soon supervenes.

Treatment.—If these parasites are detected in the fæces, commence by fasting the animal and then give a full dose of the "Broncholine" in a teacupful of gruel or milk, the former for preference. After this has acted, follow on with the "Kossolian Blood Salt," say every other day for a week or ten days. Good food is necessary.

SHEEP DIPPING.*

What Dipping has to do.—We have already shewn that, in addition to the diseases and internal parasites to which the flock is liable, the Sheepman has also to deal with a host of external parasites, which are constantly feeding upon the life blood of the animal. Unless these are destroyed it is quite impossible for the sheep to be maintained in good condition, no matter how well they may be kept. They are in a state of continual irritation, they neither feed nor rest in comfort, the wool is insufficiently nourished, the staple suffers, and the commercial value of sheep farming is seriously diminished. Added to this, the reduced condition of the animals renders them an easier prey to internal ailments. This is a matter of the highest importance which should not be lost sight of.

The Only Way.—There is only one method of getting rid of these parasites and keeping the sheep clean, viz. : by dipping, and for this reason regular sheep dipping has come to be considered by all progressive sheepmen an indispensable operation upon the farm.

Sheep dipping being thus established as an absolute necessity the next points to consider are (1) the most suitable periods for dipping, and (2) the kind of dips which are most efficient.

The Dipping Period.— This varies in different parts of the country, and with the purpose for which it is to be used. Wherever Maggot Fly exists dipping should always take place just before the period of attack, the sheep farmer should never wait until the mischief has been done. Sheep want protecting from the Fly.



Fig. 105. The Maggot Fly.

Again, whenever insect pests are present in at all large numbers they should be destroyed, no matter what time of the year it may be. Take the true Tick, for instance (see page 218), sometimes called the Louping-ill Tick ; this attaches itself to the

* Sheep dipping does not, strictly speaking, come within our province, as we are not in any way interested in the manufacture of sheep dips. The subject, however, is of such importance to Sheepmen that in their interest we cannot well omit some reference to the subject.

sheep in the early spring, when the fleece is long ; it gorges itself with blood, pairs, and then falls off on to the pasture and lays its eggs in countless thousands. On no account should dipping ever be neglected when this pest is present, and nothing but arsenical dip such, for instance, as Cooper's will destroy it.

Apart from these considerations, the best times to dip are (1) about a month after shearing, when the fleece is sufficiently long to hold the dip, and (2) again in the autumn to carry the flock in comfort through the winter.

Where sheep and lambs are driven away to winter they should always be dipped before returning to their native pasture.

Follow Directions.—Whatever dip may be used the instructions from the maker should be religiously followed.

Give the Sheep Time.—Many farmers fail to get the full benefit of dipping by hurrying the sheep through the bath. The insects cannot possibly be killed unless the dip reaches and saturates them. A few pence saved in labour by hurrying the dipping may be pounds lost in effectiveness.

The Mystery of Sheep Dips.—Manufacturers of dips make a good deal of mystery about these preparations, each proclaiming his particular dip the best in the market, but usually giving no reason for the assertion.

As a fact there is very little mystery about the matter, and it is comparatively easy for the Sheepman to form quite reliable conclusions as to the kind of dip which it is best for him to adopt.

The reliable dips on the market may be classified as follows :

1. Arsenical Powder.
2. Arsenical Yellow Paste.
3. Arsenical Black Paste.
4. Carbolic Fluid.
5. Carbolic Paste.

Chemical Skill.—The chemical characteristics and the general practical results of each of these classes of dip can be quite clearly defined, and all that then remains, apart from the question of the purity of the ingredients, is the chemical skill in the method of manufacture. Here we admit there are elements of mystery which may profoundly affect the degree of efficiency of the dip produced, even though the formula be the same.

Regarding the classification of Sheep Dips, we will take the above points in order.

Poisonous and Non-Poisonous Dips.—As a preliminary we ought to mention that all effective dips are poisonous; the Carbolic dips are only called non-poisonous because they can be sold without a licence.

Now, there are some poisons which, if taken into the system in proper doses, are speedily absorbed and pass away, leaving no particle of poison behind. There are other poisons which do not pass away, but which remain in the system for a more or less indefinite period. It is just the same with Sheep Dips.

Again, there are certain poisons which, applied in a certain manner, are rendered soluble, whereas in combination with other chemicals they become relatively insoluble, and remain therefore a longer time in the fleece, even in the presence of rain. Applying these general statements to Sheep Dips we are able exactly to classify the effects of these poisons.

Difference in Poisons.—Taking the two forms of poisons we have mentioned, the Carbolic products speedily volatilize, almost as soon in fact as the fleece is dry, and thus lose their killing properties. They possess this advantage however, that their action is immediate, as they destroy insects by absorption and coagulation of the vital fluids. They penetrate very quickly and therefore the result is gained in a very short time.

No protection in Non-Poisonous Dips.—The advantage of a non-poisonous dip is very small indeed, for naturally there being nothing to prevent the eggs or larvæ hatching out, this means that animals quickly become re-infested. This applies to most "Fluid" and "Carbolic" Dips.

The poison arsenic acts in a totally different way. It is absorbed to a certain extent, but the main poisoning takes place through the feeding passages of the insect. The action of arsenic is comparatively slow, and it often takes several days before the insects are all destroyed, but the poison does not volatilize as in the case of carbolic, and it remains in the fleece until it is washed out by the rain. Even Arsenical Dips, however, vary according to the form of the dip.

Powder Dips.—In the various Arsenical Powders, for instance, a certain percentage of the arsenic, varying according to the method of manufacture, combines chemically with the sulphur and forms sulphides of various character, which accounts for the rich chrome colour of these dips.

These sulphides are less soluble than the rest of the arsenic in the dip, and are not therefore so readily washed out by the rain.

The colouring of the Powder dip may be seen in the fleece for months after the dipping has taken place, and, so long as it remains, it is acting as a protection against further attacks. This is the reason why the Powder dip has become so popular, and why it is such an effective remedy for Scab and other pests, and for the prevention of maggot fly. The sulphur in the dip is also a valuable adjunct in this question of protection.

Arsenical Sulphur Dip.—The Arsenical Sulphur Paste has much the same effect as the Powder, except that it contains less sulphur, and is therefore somewhat less protective. On the other hand, it penetrates quicker than the Powder, and therefore is often preferred where hasty dipping is an object.

Waterproofing Dips.—The Black Arsenical Paste has usually, in addition to the arsenic, a fairly high percentage of carbolic, but no sulphur. It acts quickly, and is also protective, but not to the extent of the Powder, or even the Yellow Paste. It has, however, a valuable property not possessed by either the Powder or the Yellow Paste, viz : it is a waterproofer.

We ought to add that the Carbolic Paste possesses a similar advantage over the Carbolic Fluid in that it has these waterproofing qualities.

SUMMARY.

Summing up the above we find :—

1. The Arsenical Powder offers the greatest protection of all dips, but penetrates the slowest, and must be given a longer time in the bath to ensure complete saturation of the fleece. Cooper's is the original of this class of dip.

2. The Yellow Paste is somewhat less protective; it is quicker in action and as a rule does not waterproof. It is generally used as a summer dip, as it wards off attacks from the maggot fly.
3. The Black Arsenical Paste is still less protective; it also acts quickly and, in addition, waterproofs the sheep. This is an autumn and winter dip.
4. The Carbolic Fluid clears off all the insects and is rapid in action, but its benefits speedily disappear.
5. The Carbolic "non-poisonous" Paste has the same action as the Fluid plus waterproofing properties.

All that now remains is the question of purity of the ingredients, and skill in manufacture.

Importance of Purity.—In the Powder dips there is great divergence in the method of manufacture. Colour and analysis are no guide whatever; most Powder dips have practically the same analysis, yet some are very good and others relatively inferior. Experience alone can guide the Sheepman in choosing the powder which is best in quality.

It is in the Carbolic dips that impure ingredients are most largely used; these consist of various kinds of tar oils, which are not only less effective, but tend, according to experiments conducted by the United States Government, to check the condition of the sheep and the growth of wool fibre, as well as rendering the wool less suitable for manufacturing into high-class fabrics.

The Golden Rule.—The golden rule to observe in selecting a dip is to buy from high-class firms, who have a reputation at stake. These firms cannot afford to use inferior ingredients, and are much more likely to have mastered the important chemical problems involved in the process of manufacture. It is here, and here alone, that there is any mystery in Sheep Dips.

Dipping Baths.—On this subject the Board of Agriculture leaflet has the following:—

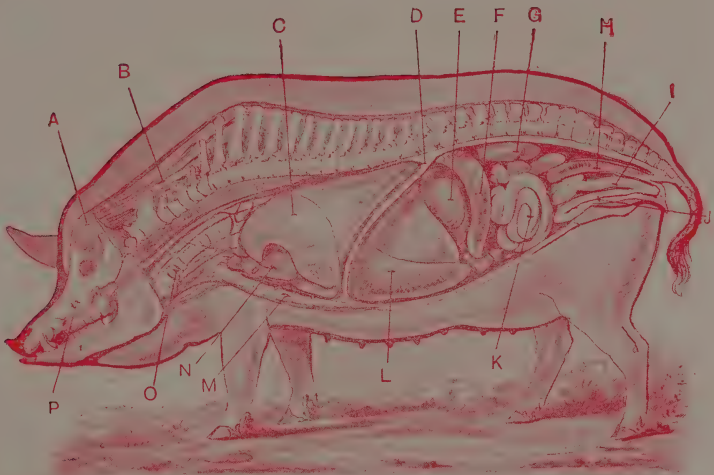
“Of the two forms of bath—hand and swimming—the latter is greatly to be preferred. The advantages of the swimming bath are: (1) The sheep, being in a natural position, may be completely immersed, even in a poisonous solution, with comparatively little danger; (2) sheep in lamb may be dipped with much less risk; (3) the motion of swimming allows no portion of the fleece to escape contact with the solution; (4) the work is more easily and therefore more effectively performed; (5) a larger number of sheep can be dipped in a given time and with fewer operators.”



Fig. 106. The Swim Bath.

The old hand-bath should never be used except where it is impracticable to obtain a swim bath.

PIG.—The Internal Organs.



- A. Poll or Crest of the Skull.
- B. Suspensory ligament of the Neck.
- C. Left Lung.
- D. Diaphragm, a muscular division of the body into two cavities.
- E. Part of the Stomach.
- F. Spleen.
- G. Kidney
- H. Rectum, or last part of Gut.

- I. Uterus or Womb.
- J. Bladder.
- K. Coils of Small Gut or Intestine.
- L. Liver.
- M. Breast Bone.
- N. Heart.
- O. Trachea or Windpipe.
- P. Skull.

PIGS.

APOPLEXY.

Causes.—This disease is rather common amongst young and fat pigs, and is usually caused by want of exercise, or a change from a plain diet to a rich and generous one.

Symptoms.—The usual symptoms are heaviness about the eyes, dulness and disinclination to move.

Treatment.—In bad cases bleed from the palatine artery situated on the roof of the mouth, or slit the ears, and in order to encourage the flow of blood bathe with warm water. Give a full dose of the "Red Drench" in a teacupful of gruel, and repeat if necessary. Injections of soap and water are useful, to which add a little "Gaseodyne." The flesh of a pig having died of Apoplexy is quite good for human consumption, the malady not being due to any infectious or constitutional disease. In these cases it is always advisable to give the other pigs, which are apparently healthy, an occasional "Porcino Pig Powder," so as to cool the system.

CASTRATION AND SPAYING.

Previous to this operation pigs should be fasted for about twelve hours, it being dangerous to castrate on a full stomach, as it delays the healing process. Following the operation, feed sparingly on trough-food for a few days, and give an occasional dose of the "Red Drench" so as to cool the system, and check any tendency to inflammation. The best age to castrate is when the pigs are seven or eight days old, or before the farrow is weaned, afterwards letting them lie with the sow till the wounds are properly healed. The great secret of success is to see that the instruments and parts are clean, also to employ the "Antiseptic Dressing"* freely to the hands and subsequent wounds so as to prevent infection. If this is done the pig gets comfortably over his trouble in a week.

Spaying is a far more difficult operation, and should only be performed by those having had experience.

**The ordinary Green Castrating Ointment can be had if preferred.*

CHILL OR FEVER AFTER FARROWING.

Cause.—This frequently occurs after parturition, and unless active measures are taken serious consequences may follow, such as blood-poisoning, and even death.

Treatment.—Place the patient in a warm and well-ventilated shed, and give the "Alcoholic Ether,"* as directed, in plenty of gruel. If the bowels are constipated a dose of the "Red Drench" may be given well mixed up in the wash and repeated in half doses if necessary.

COLD, OR CATARRH.

Cause.—Exposure to cold or damp.

Symptoms.—A discharge from the eyes, shivering fits, and sometimes a cough, etc.

Treatment.—Place the patient in a warm, dry shed, and give a "Porcino Pig Powder" in the morning, and the last thing at night a dose of the "Alcoholic Ether," so as to check all feverishness. In some cases it is desirable to rub a little of the "Chemical Extract" briskly into the throat and repeat once or twice daily. Give lukewarm, sloppy and nutritious food, to which may be added a little barley or rice meal, and cooked vegetables. All food should be given warm and do not allow more than is cleared up. Plenty of ventilation is essential.

COLIC OR GRIPEs.

Causes.—This generally arises from eating unwholesome food, or exposure to cold and wet.

Symptoms.—Restlessness, with extreme pain, causing the patient to roll on the ground.

Treatment.—Give a dose of the "Gaseous Fluid" immediately, and repeat in fifteen minutes, if not relieved. Keep the animal warm and give a laxative diet for a few days, after which administer a course of the "Kossolian Blood Salt," so as to restore tone to the digestive organs, and increase appetite. Let the return to the usual diet be very gradual. See that the quality of the food is good.

* A Customer, Mr. W. R. Lewis, of Solva, Pembroke, writes: "I used a sow that had taken a chill after farrowing: she had eleven youngsters and was taken bad four days after giving birth. I gave her two doses of the 'Alcoholic Ether,' which made her in a bath of perspiration, and in three days afterwards she was in full milk again."

COMPOSITION OF SOW'S MILK.

Albumen	..	..	..	..	6.2
Butter fat	..	..	..	..	5.7
Sugar	..	..	..	..	5.0
Water	..	..	..	..	82.6
Salts..	..	..	..	..	0.5

CONSTIPATION OR COSTIVENESS.

Causes.—The chief causes of constipation are over-feeding, an insufficient supply of fluid, and the too frequent use of astringent foods, such as acorns, beech nuts, etc. In-pig sows that get little or no exercise are especially liable to become constipated, but it also affects young pigs if too highly fed. This condition is very liable to occasion fits if not promptly attended to.

Treatment.—Place the animal in a comfortable shed, and fast for twenty-four hours, after this give a full dose of the "Red Drench" in a little warm wheaten gruel sweetened with treacle. Repeat the dose on the third or fourth day and feed on a simple wash, with roots, etc.

In obstinate cases use an enema of soap and lukewarm water, and this should be persevered with every four hours, until the bowels are thoroughly moved. Small coal, charcoal, green food, linseed gruel, etc., are of great use in promoting digestion, and preventing this complaint, especially if a little of the "Balsamic Castor Oil" be mixed with the latter morning and evening for a few days.

COUGH (Non-Parasitic).

Cause.—Exposure to cold or damp, etc.

Symptoms.—These are too well known to need description.

Treatment.—Place the patient in a warm shed with some good dry bedding and feed on a light and sloppy diet, such as gruels, linseed tea, etc., little and often. The "Easakof" is the simplest and best form of medicine to administer, the attendant merely having to plaster a little between the

**If a liquid is preferable give the Special "Cough Elixir."*

teeth or on the tongue two or three times daily. It has an agreeable taste and is most effectual, even in cases of long standing. The sides of the chest (ribs) should be rubbed with the "Chemical Extract." For Parasitic Coughs *see* page 245.

DIARRHŒA OR SCOUR.

Causes.—This is one of the most costly and common ailments that the pig breeder has to contend against; but it must not be considered as a disease in itself, but merely a symptom. As a rule it attacks sucking pigs, from one to four weeks old, due to an altered or unhealthy condition of the sow's milk, which often arises from improper dieting. Internal parasites and cold damp sties are also causes. A sow coming on heat whilst the little pigs are sucking invariably produces Scour in the latter.

Symptoms.—When young pigs are affected the fæces are sour smelling, semi-fluid in character, and there is a disinclination to suck. They walk about with arched backs and drooping ears, the appetite soon disappearing.

Treatment.—Give the sow a full dose of the "Balsamic Castor Oil," which will act on the young pigs through the milk and help to assist them in getting rid of any curd or other irritating material in the stomach or intestinal canal. Change the sow's diet, giving dry crushed corn and water or a few old beans; after this, if the Scour continues give repeated doses of the "Curdolix" as directed. If parasites are the cause of the Scour and are noticed in the dung, treat them accordingly with either the "Worm Powder" or "Broncholine." Keep the sties clean and well disinfected with the "Globe" Disinfectant, allowing plenty of good clean bedding. See that the drinking water is pure. In ordinary cases it is only necessary to give a few doses of the "Curdolix" in a small quantity of well-boiled flour or arrowroot gruel, but if great pain is exhibited add a small dose of the "Gaseodyne" to either of the above medicines. Should the Diarrhœa be of a persistent character, with rapid wasting, this points to Tuberculosis or Consumption, and treatment in such cases is of little avail.

DISEASED AND BRITTLE HOOF.

Cause.—Usually due to indigestion or errors in dieting.

Treatment.—For ordinary cases of diseased feet in Pigs, commence by cleansing with soap and water, and when dry apply the “Azodyne” on a piece of tow between the claws. Place the animal on dry ground afterwards, and give a few doses of the “Kossolian Blood Salt” in the swill, so as to give tone to the system, and thus assist the healing process.

See also under Indigestion, page 245.

ECZEMA OR SKIN ERUPTION.

Causes.—Eczema is mainly due to errors in dieting, also worms or anæmia. Sudden changes from a poor to a highly nitrogenous diet is a fruitful cause for the complaint, even in young animals as well as old.

Symptoms.—Red bladder-like pimples or sores are noticed on the sides, belly and eye-lids, which discharge their contents, producing a scaly or scabby appearance of the skin. Indigestion frequently accompanies Eczema, and when this is so the irritation of the skin is even more intense.

Treatment.—In these cases it is always advisable to get the bowels well open at once by giving a full dose either of the “Red Drench” or “Balsamic Castor Oil”; this done, follow on with the “Porcino Pig Powder” as directed, together with a light diet, such as sharps, linseed tea, etc. After treating in this way for several days, sprinkle the food with the “Kossolian Blood Salt” so as to purify the blood and help on to condition. The sores or pimples must be anointed daily with the “Sulphuretted Ointment,”* and in bad cases it is better to wash the skin with carbolic soap and water before applying the “Ointment.” Turn the affected animals into a meadow for a few days after the febrile stage has been passed. If young pigs are affected, the medicine (“Red Drench”) must be given through the sow, so as to correct the faulty quality of her milk. Keep the sty as clean as possible and thoroughly disinfect with the “Globe” Disinfectant.

*If a liquid is more desirable employ the “Xemos.”

ENEMAS, INJECTIONS OR CLYSTERS.

The above are used for various purposes, viz. :—

1. For emptying the bowels.
2. For killing or expelling worms located in the rectum and large intestines.
3. For restraining Diarrhœa.
4. For nourishing the body when food cannot be given by the mouth.

1. For Emptying the Bowels.—When the nature of a disease necessitates a quick evacuation of the bowels, an enema of warm soap and water is employed, the quantity being from two to three quarts. The best instrument to employ is the "Simplex" Clyster Syringe, but see that the nozzle is always oiled or smeared with soap, and inject *slowly*.

2. For Expelling Worms.—For this purpose the enema is usually composed of oil, to which add a dose of the "Broncholine."

3. For Restraining Diarrhœa.—To a quart of oatmeal gruel add a full dose of the "Curdolix," according to the severity of the case.

4. For Nourishing the Body.—Gruel is generally the agent employed, but in very debilitating diseases great benefit will be derived if the "Cod Liver Oil Powder" is used two or three times daily, by the addition of water. Eggs or Brandy can be added to this nutrient enema with great benefit.

FARROWING (BEFORE AND AFTER).

Sows Before Farrowing.—A few days before farrowing make the sow as comfortable as possible, and do not allow her too much bulky food, also give a dose of the "Red Drench" three days before farrowing, so as to cool the system and prevent Milk Fever. As soon as the immediate signs of parturition are manifest, such as labour pain, etc., keep her perfectly quiet for a few hours. A few weeks before farrowing the sow should be fed three or four times daily, the diet consisting of steamed potatoes, turnips, beetroots, carrots, etc.

Sows After Farrowing.—Three or four days after parturition give barley meal, warm bran gruel, sloppy sharps or middlings, meat broth, butter, milk, etc., and a dose of the "Red Drench." Gentle exercise should be allowed the mother, and

this will prevent her limbs becoming stiff or cramped. If debilitated and off appetite, give a few doses of the "Gaseous Fluid" in place of the "Red Drench." In cases of feverishness or tendency to inflammation after farrowing, give the "Alcoholic Ether" as directed. The young pigs should be enticed to feed themselves at four or five weeks old, and it is a good plan to place a small trough outside the mother's sty, which the sow cannot get at. Skim milk can be given to both mother and litter with advantage.

FEEDING PIGS.

Pigs are usually fed on sharps, or middlings as they are called, twice or even three times daily, with some good peas, a little green food, cinders, coal, etc. It is advisable not to give too many peas mid-day, as they are apt to cause apoplexy or fits. Some authorities prefer to give all foods warmed, especially during the winter; but the objection to this is, that if once started it must be continued. Never give more food than is cleaned up before leaving the trough, and for raising young pigs the great secret of success lies in giving food little and often. Barley meal is a good staple diet, for it makes better pork than any other corn, especially if it is given thicker as the animal grows older. Milk, which is the sheet anchor for feeding pigs, should be given regularly, but be very careful that this is not obtained from tuberculous cows, or serious consequences will follow. Clean water should always be at hand, especially in the summer, but great risk is run by allowing pigs to drink from filthy water troughs, as parasitic germs are very liable to be taken into the system in this way. If pigs are found to get distended stomachs and to look rather hide-bound, reduce the feeds and give same oftener, but vetches, mangel-wurzels, turnips, wash from the house, and refuse from the garden are all useful for feeding purposes; it is sometimes advisable to add some brewer's grains, bran, or even pollard in order to make the wash thin. On dairy farms whey or skim milk can be employed with advantage. Great care should be taken to avoid either washing soda or brine getting into the hog-tub, for both will cause Gastritis or death if taken in sufficient quantity, and the symptoms closely resemble "Swine Fever." Always avoid giving raw flesh or acorns to farrowing sows; if the latter are given at all see that they are ripe.

FITS.

Causes and Symptoms.—These commonly occur in young pigs just weaned, and especially in those that have not been taught to eat before leaving the sow. Worms are a fruitful cause, and if suspected, treat at once, for pigs can never properly thrive with them. Fits also arise from over-feeding, or feeding on material which the undeveloped digestive organs of young pigs are incapable of assimilating. With ordinary attacks the animal falls to the ground, froths at the mouth, and the limbs have a jerky convulsed movement.

Treatment.—Clear the bowels as soon as possible by a dose of the "Red Drench," or "Balsamic Castor Oil," and assist its action by plenty of warm soapy water enemas, using a Clyster Syringe for the purpose. Change the diet as much as possible, and include sweet milk and a small quantity of ground oats; following this, give a "Porcino Pig Powder" once or twice daily, for a few days, in order to tone up the digestive organs.

FOOT AND MOUTH DISEASE.

Cause.—This is a contagious fever and is said to be due to a minute organism. The most infective agent is milk obtained from infective cows, especially if given warm.

Symptoms.—Shivering fits, dulness, lameness in the limbs, due to inflammation between the skin and hoof, causing blisters or ulcers. When the mouth is affected the patient "slavers" a great deal and refuses food.

Treatment.—Place the animal in a clean dry shed and have the feet thoroughly cleansed with carbolic soap and water. The "Alumine" must be applied to the sores on snout and in the mouth as directed, and plenty of good soft nourishing food given so as to keep up the patient's strength. Any tendency to constipation must be overcome by small and repeated doses of the "Red Drench," either in the food or as a drench. The "Gaseous Fluid" can be given when the fever has departed, so as to brace up the entire system.



Fig. 107.

A. Seat of Disease.

GASTRITIS, OR INFLAMMATION OF THE STOMACH.

Cause.—This often arises from ordinary salt or saltpetre being put in the wash, or hog-tub; but over gorging with oats or any other heavy food will induce it. Putrid flesh or vegetable poisons will also produce it.

Symptoms.—Off appetite and great desire to drink, accompanied with redness of the skin, etc. The bowels are usually relaxed, and sometimes vomiting or colicky pains are present.

Treatment.—Commence by giving a dose of the “Balsamic Castor Oil” as directed, for on no account must the Diarrhœa (if present) be stopped, or at any rate not suddenly. If the pain be acute, give the “Gaseodyne” every three or four hours, in fact it is a good plan to add a little to the “Balsamic Castor Oil.” Feed on a light and nutritious diet, such as cold oatmeal or linseed gruels, but be careful to return to the usual food very gradually. With convalescence give the “Thriving Powder” as directed, so as to get up the strength and increase appetite.

GESTATION OR PREGNANCY IN THE FIG.

This varies from 112 to 120 days, the former being the normal period in a healthy animal. About two or three weeks previous to parturition the teats increase in size and their points become reddened; in addition to this the vulva swells. It is a bad policy to allow sows to breed too often, as it overtaxes their strength; two litters in a season is ample, but of course this depends upon the constitution of the animal. As a rule a sow is in-pig when she ceases to be on heat, rejects the advances of the boar, and has a tendency to lie down, etc. Breeding sows should always be kept in rather poor condition in order to induce them to produce large litters, over-feeding invariably disappoints the owner.

DRENCHING FIGS.

Medicines should be mixed with the food, and when this fails, as in cases of total loss of appetite, the draught or electrolytic form should be employed. Pigs are easily choked, and care should be taken not to pour fluids into these animals

whilst they are squealing. A good plan of giving a drench to pigs is to cut off the toe of an old boot and thrust the end into the mouth; when the pig begins to chew it, pour the

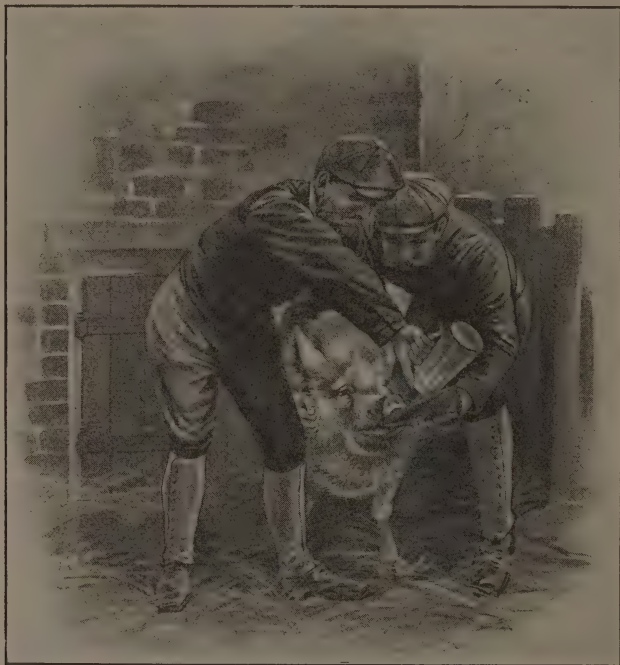


Fig. 108.—Drenching Pig through an old shoe.

draught into the top as into a funnel very gently. Always let the medicine be “gruelly” in consistence, for it is less liable to choke.

Mr. W. R. Lewis, of Solva, Pembroke, writes us as follows on a novel and apparently practical mode of drenching pigs :—“I had a sow some two years ago that wanted physic badly so two of my men and myself set about drenching her with linseed oil, using an old shoe as a medium, but I soon found out that the shoe would not carry the oil to the root of the tongue and that nearly all the oil was on the floor instead of being inside the sow. So, happily a thought struck me that a piece of iron piping that I had would answer the purpose. The piece I have is about 1 ft. 6 in. long, and about $\frac{3}{4}$ bore. I plugged one end, measured its capacity and found that it would hold about $\frac{3}{4}$ gill. Well, I thought to myself, $\frac{3}{4}$ gill at a time is not going to choke her and I started operations, and by putting the end of pipe on the root of tongue she took $\frac{1}{2}$ pint of oil without a drop losing. The pipe should be very strong, because it is bitten unmercifully, and, of course, the sharp edge should be rounded off fine. I had the loop end of a thin rope round the sow's jaw.”

HUSK, HOOSE OR COUGH (Parasitic).

Cause.—This disease is due to the presence of small thread-like worms called Strongyles in the wind pipe and bronchial tubes, and usually affects the weakly animals first. The parasite most commonly found is termed *Strongylus paradoxus*.

Symptoms.—The symptoms are practically the same as in the calf or sheep, and the only reliable evidence of this disease being present is the coughing up of worms or eggs.

Treatment. — Keep the animal in a warm and comfortable place, and give the "Broncholine" as directed. The "Gaseous Fluid" should be given once or even twice daily, in addition to the best quality food, little and often, so as to sustain the debilitated system.

Prevention. — Burn the droppings from infected animals and thoroughly disinfect the sties, etc., by using the "Globe" Disinfectant, for the best authorities are unanimous in thinking that these parasites are hatched in the drains of the pig sties.

NOTE.—See also Cough (non-Parasitic), page 237.



Fig. 109. The *Strongylus paradoxus*.

INDIGESTION:

Causes.—Improper dieting or partaking of inferior foods, etc. The stomach of the pig is a single receptacle and not divided into compartments like that of the cow, and holds about twelve or thirteen pints when full; the large intestine is said to be about twelve times the length of the body. Proper digestion and assimilation depends upon these organs being kept in proper condition and not over-taxed, for, as a matter of fact, digestion is rather slow in pigs.

Symptoms.—The appetite becomes morbid or unhealthy, the belly swells and the skin looks unthrifty. Pigs often grind their teeth when suffering from indigestion.

Treatment.—Seek out the cause and the effect will cease is a well-known maxim, but in the majority of cases indigestion is invariably traced to unsuitable food. Commence by giving an aperient, such as the “Balsamic Castor Oil” or “Red Drench” in a little warm gruel or milk. Following this, give a course of the “Kossolian Blood Salt,” and feed on the best food at regular intervals, little and often. If the food has been of a hot or heating nature, change it to that of a cooling character, such as plenty of green food, etc. Supply a few cinders or small coal if these are not already included in the dietary.

LICE.

Cause and Symptoms.—The pig harbours the largest Louse, which is called *Hæmatopinus Urius*, which is a voracious blood sucker and causes animals any amount of itching and discomfort, especially at night. They are usually found at the back of the ears and neck. A pig that harbours them cannot possibly rest comfortably and thrive well. The breathing apparatus of this insect is placed alongside the abdomen, and the head is very long and narrow. Poor blood and ill condition are very conducive to Lice.



Fig. 110. Pig Louse
(*Hæmatopinus Urius*)
Magnified 7 times.

Treatment.—Begin by washing the skin all over, commencing at the head, with warm water and carbolic soap, and having dried with a towel rub in the “Sulphuretted Ointment,” or if a liquid is more desirable, the “Xemos.” The bedding should be removed and burned, and the sty thoroughly disinfected with the “Globe” Disinfectant, not forgetting to spray the walls and roof with the preparation. The after treatment consists in giving a few doses of the “Kossolian Blood Salt” so as to help on to condition. The vitality of the eggs or “nits” being considerable, it is always advisable to repeat the dressing two or three times at intervals.

of a week, so as to ensure killing them as soon as they are born. It is a great mistake to allow pigs to remain lousy, for they render the skin harsh and scurfy, due to spending their time in rubbing and fretting which would normally be occupied in sleep and putting on fat.

LIVER DISORDERS.

Cause and Symptoms.—These are usually due to errors in dieting, and with it the skin becomes more or less unthrifty with possibly breakings out similar to Eczema. The patient has a dull and depressed look and the appetite is capricious.

Treatment.—Feed on a very light and laxative diet, and give a dose of the “Red Drench,” repeating same in half doses on the fourth day; this to be followed by a course of the “Liver Drench” as directed. A run at grass will do good.

LOSS OF APPETITE AND CONDITION, UNTHRIFTINESS, Etc.

Causes.—Errors in dieting, worms, and insanitary surroundings.

Treatment.—Commence by giving a dose or two of the “Porcino Pig Powder” and feed on a light diet for a few days, giving plenty of vegetable food, such as vetches, young clover, cabbages, etc. After this follow with a course of the “Kossolian Blood Salt”; giving same in the wash twice daily for a few times. By degrees introduce the usual food. Young pigs make wonderful progress after this treatment and rapidly put on flesh. When a fattening pig goes off its feed or rejects it, reduce the meals by half for several days, and give “Kossolian” for a week or ten days before slaughter. Never give more food than is readily cleared up and on no account give it sour or stale.

MANGE OR ITCH.

Causes.—This is due to a minute insect called *Sarcoptes Suis*, which is very similar to that associated with scab in sheep, but it cannot be seen with the naked eye. Pig Mange is transmissible to all animals and to the human being.

Symptoms.—Small red points like flea bites first appear about the ears and around the eyes; then on the withers and inside of the thighs, these usually joining together in the form of large scabs or scales, which later on invade the whole surface of the body. The skin becomes wrinkled and the bristles get glued together in little patches and then fall out. As these extend the body looks as if it had been bespattered with dry guano. The *Sarcoptes* usually burrows beneath the skin; if deeply scraped the insect can be detected by the aid of a pocket lens. If the trouble is allowed to go on unchecked, rapid loss of condition soon sets in and fattening is arrested, due to the intense itching.



Fig. 111. The Mange Parasite. (After Neumann.)
A. Under surface of male. B. Under surface of female.

Treatment.—Cleanse the skin by well scrubbing it with carbolic soap and lukewarm water, so as to remove all dirt and crusts, and having dried with a cloth, apply the "Sulphuretted Ointment." Leave this dressing on for a couple of days, then wash off and repeat two or three times. Feed well and disinfect all sties and troughs with the "Globe" Disinfectant as directed. Burn all dirty litter and manure.

MEASLES OR BLOTCHES.

The above must not be confounded with the parasitic "Measles," which is due to the presence of small "bladder worms" technically known as *Cysticercus cellulosæ*, which are found in the muscle substance of pork. These parasites produce tapeworms in man.

Symptoms.—This disease generally attacks young pigs, and is marked by considerable fever and constitutional disturbance, showing itself in a number of small watery pustules on the skin. These reddish patches will be seen near the armpits, groin, and outside the mouth, etc., and there is usually a cough, sore throat, and a discharge from the nostrils.

Treatment.—See that the animal is isolated at once and comfortably housed at night, avoiding all draught. Give gruels and a rather laxative diet, and first thing in the morning, on an empty stomach, administer a "Porcino Pig Powder," as directed, so as to cool the system. Give this for three consecutive mornings, and then every other morning, and so on until a cure is effected. Anoint the affected parts of the skin with a little of the "White Chemical Extract" daily and feed little and often. If the bowels are constipated give a dose of the "Red Drench," and repeat in twelve hours if necessary. Allow a nice bed of dry wheat or oat straw, and disinfect the sty with the "Globe" Disinfectant.

MEASUREMENT OF MEDICINES.

The following information may be useful to some of our readers: "Common tumblers contain from 8 to 10 fluid ounces; a pint contains 20 fluid ounces; breakfast cups 6 to 8 fluid ounces; teacups 4 to 6 fluid ounces; wine-glasses about 2 fluid ounces; tablespoons half a fluid ounce; dessert spoons 2 fluid drachms; and teaspoons 1 fluid drachm of 60 minims or drops. Such measures, however, are only approximately correct."

NOTE.—In giving medicines to pigs, the dose varies in accordance with the temperament or condition of the patient, for it sometimes happens, especially in extreme cases, that double the dose advised on bottle is called for.

APOTHECARIES' MEASURES OF WEIGHT.

1 Grain,	gr.j.	
1 Scruple,	℥j.	= 20 grains.
1 Drachm,	ʒj.	= 3 scruples = 60 grs.
1 Ounce,	℥j.	= 8 drachms = 480 „
1 Pound,	lb. j.	= 12 ounces = 5760 „

PHARMACOPŒIA MEASURES OF MASS.

1 Grain	gr.j.	
1 Ounce, oz.j.	℥j.	= 437.5 grains.
1 Pound	lb. j.	= 16 ounces = 7,000 grs.

MEASURES OF CAPACITY.

1 Minim, min.	℥j.	
1 Fluid drachm,	f ʒj.	= 60 minims.
1 Fluid ounce	f ℥j.	= 8 fluid drachms.
1 Pint,	O.j.	= 20 fluid ounces.
1 Gallon,	C.j.	= 8 pints.

It is often useful to recollect the weight of different measures. Of water, one minim (℥j.) weighs nine-tenths of a grain; a fluid ounce at 62° Fahr. weighs exactly 437.5 grains, or an ounce avoirdupois; hence a pint is equal to a pound and a quarter, and a gallon to ten pounds imperial weight.

NETTLE-RASH, URTICARIA, OR REDNESS OF THE SKIN.

Causes.—Overfeeding, want of exercise, or insanitary conditions. Redness of the skin is often produced by lice or violent scratching.

Symptoms.—The first symptom to be noticed is indigestion, with loss of appetite, and the bowels may be either constipated or relaxed. The skin quickly becomes hot and tender, and a number of spots or pimples appear, which may be few in number, about the size of a sixpence or scattered over the body about the size of a half-crown piece. It is sometimes difficult to distinguish this disease from Swine Fever, especially at the outset, although as a rule the patches are in a different position and there is very little, if any, fever present.

Treatment.—Commence by giving a full dose of the “Red Drench” so as to relieve the over-loaded blood vessels and liver, and do not give any food for at least twelve hours



Fig. 112.—A case of Nettle-rash.

afterwards. The skin must be anointed daily with the “Sulphuretted Ointment” and should the disease continue, give a dose of the “Balsamic Castor Oil” either neat or in milk, and repeat if necessary on the fourth day. With convalescence give a course of the “Porcino Pig Powders,” and see that the usual mode of dieting is very gradually introduced. It is advisable to isolate the affected animals.

ŒSTRUM, HEAT OR RUTTING.

Symptoms.—Œstrum, or being in season, lasts from one to three days, and then reappears every three weeks or a month. As a rule, the generative organs, including the vulva, are swollen and reddened, the sow becomes restless and has a desire to mount the backs of other pigs when in contact with them. The best thing to do is to make arrangements for the service of a good boar as soon as possible. The sow manifests rutting during October and November, at least that is the time when she is usually put to the male, and if put a second time this is in the spring, provided two litters a year are desired. A good boar will often serve thirty or forty sows in a year, and the connection generally lasts about ten minutes. Plenty of exercise out at pasture and the avoidance of fat are conducive to regular œstrum and large litters.

PIG TERMS.

A *gilt* is a young sow or unspayed female breeding pig. She should be ready to be mated at about eight months old.

A *barrow-hog* is a boar pig, castrated when young for feeding purposes.

A *hog* is a pig for feeding, but it is also a term given to a breeding boar.

A *brawn* is a young uncastrated male.

A *stag-hog* is a boar that has been kept for breeding purposes, and afterwards castrated.

A *litter* is the whole family a sow suckles at one time.

PNEUMONIA AND PLEURISY.

Causes.—Colds, chills, etc. Pigs appear to be very liable to the above dangerous diseases, due to neglected colds and chills, but luckily the contagious form is hardly known in Great Britain.

Symptoms.—Coughing and shivering fits are noticed, and great difficulty is experienced in breathing. The appetite is lost, and the temperature rises rapidly.

Treatment.—Place the patient in a warm, dry, well-littered sty at once, and give the “Vetalenta” * every four hours should the fever run high. Rub the sides of the chest with the “Chemical Extract,” afterwards covering with a strip of flannel, and feed on a sloppy and nutritious diet, such as milk with eggs, linseed tea, bran mash, etc. The strength must be kept up by the “Gaseous Fluid” given in plenty of gruel as directed.

* Mr. Adams, North Stoke, Wallingford, writes:—“I feel that I must let you know that your ‘Vetalenta,’ coupled with such concise instructions for treatment, have saved my sow’s life. On the 16th inst. when I wrote to you she was suffering from acute inflammation of the lungs and by the time your medicine arrived (17th inst.), she was lying on her side gasping with her tongue hanging out, in fact she was so bad that it was difficult to know how to administer the medicine. However, this difficulty was got over by mixing up a small quantity of middlings and hot water with a little linseed oil added and then driving her to the trough. As soon as she started drinking, the Vetalenta was poured in carefully drop by drop just in front of her nose. By this means a full dose was administered every three hours, and by the 20th inst. she was quite out of danger; to-day (29th) she is as well as ever. I am very grateful for the wonderful promptitude with which you came to my assistance, so please make any use you like of this letter.”

PROTRUSION OF THE RECTUM.

The above term indicates a forcing outwards of the rectum in the form of a fleshy looking swelling.

Causes.—This is invariably due to some obstruction of the intestines, or from overstraining during Parturition or Dysentery.

Treatment.—Thoroughly cleanse the part with warm water and, having anointed same with either the “Carbolized Lambing Oil” or “Chemical Extract,” carefully return to its proper position. It will require to be pushed some distance, and if straining takes place give a dose of the “Gaseodyne” in some treacle. This mixture can be placed in the mouth and repeated if necessary. After this pass some strong double thread through the top part of the anus and tie with a knot, or, better still, put on a truss. Only liquid and light food must be given for several days afterwards, with an occasional dose of the “Red Drench” or “Balsamic Castor Oil,” for constipation must on no account be allowed.

PULSE, RESPIRATION AND TEMPERATURE.

The Pulse. The best place to take the pulse of the Pig is over the region of the heart, or at the femoral artery which is found inside the thigh. The normal pulse-beats per minute are from 60 to 70.

The Respirations are taken by the application of the ear alone, or with the stethoscope over some part of the respiratory organs such as the nose, throat, windpipe, or chest. Experience only will teach the different sounds that signify health or disease. The normal respirations per minute are from 15 to 20.

Temperature. The introduction of the Clinical Thermometer now affords the most valuable diagnostic aid to pig-owners, and

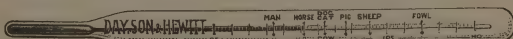


Fig. 113. Clinical Thermometer.

places them at a great advantage over the old farriers of the past. The normal temperature is $102\frac{3}{4}$, and the best place to take it is at the anus.

RHEUMATISM, CRAMP AND LAMENESS.

Causes.—Cold or damp sties, heredity, unsuitable food, etc. It is more prevalent in the spring and autumn, especially in clayey localities. Numerous investigations have been made by veterinary surgeons and others to discover the presence of a microscopic agent or bacteria so as to demonstrate its pathological characteristics, but so far the results have proved very contradictory and uncertain.

Symptoms.—This troublesome and painful complaint is accompanied with lameness and swelling of the joints, which has a tendency to fly from one part of the body to another. It is especially prevalent amongst young pigs. The bowels may be either constipated or relaxed. The local temperature is higher than that of the surrounding parts, sensibility becomes very marked, and pain is evidenced on the slightest movement of the affected joint. The pain becomes more intense as time goes on, which often gives rise to the suspicion of a fractured bone. Loss of appetite is invariably found to accompany this disorder and the urine is decreased in quantity.

Treatment.—Place the animal in a dry and warm shed with plenty of litter, and give a dose of the "Red Drench" so as to get the bowels freely opened; this to be repeated in three or four days' time. After this follow on with the "Felon Drench" as directed, or a little can be given daily in the swill until an improvement is noticed, when the dosings may be lessened. Foment the swellings with hot water, and after carefully drying, rub in gentle the "Brown Chemical Extract." Change the diet to a more nutritious one, omitting all overheating foods, such as barley meal, peas and maize; substituting instead crushed oats, oatmeal, pollard and a few roots. When the joints become very hard, and the lameness chronic, treatment is of very little avail, and such patients are not worth keeping; they are however quite fit for food when killed, provided the temperature has not risen above 100 degrees Fahrenheit. In very painful cases give a dose of the "Gaseodyne" occasionally in a little warm oatmeal gruel and do not disturb the animal more than necessary. Allow plenty of litter in the sty, and disinfect same with the "Globe" Disinfectant. In certain chronic cases of Joint Rheumatism we have found the application of the "Blister Ointment" even preferable to the "Chemical Extract."

RINGING PIGS.

This operation is carried out in order to prevent pigs uprooting the soil, for they do considerable damage in this way sometimes, and in countries where they are allowed to roam about at will "ringing" will therefore be found a distinct advantage. All store pigs and fattening ones should be rung

at three or six months old according to size, especially if they are going to be turned out into a paddock or meadow, and it will be found that they thrive all the better afterwards. It is not a very painful operation if performed

skilfully; the difficulty is to hold the animal in the proper position. It merely consists of passing through the nose either a ring or some such contrivance which, on being rubbed against anything, causes pain, thus preventing the animal's natural proclivity. With some boars it is advisable to insert a couple of rings. The most efficacious and simplest method is as follows: Cast the pig, and having secured and muzzled him, bend a thick bit of wire into the shape of the letter "U," both ends being sharpened in order that they can easily be passed through the nostrils. A small metal plate must be made with two holes in it corresponding in position to the distance between the nostrils. Having passed the ends of the wire through the nostrils and holes in the plate, secure them by bending the ends into a spiral, as depicted on drawing.

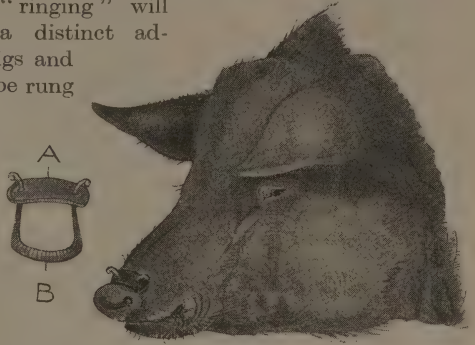


Fig. 114.

Proper way to ring a Pig.

RINGWORM.

Cause and Symptoms.—This disease is common to most animals, including the pig, and is caused by a vegetable parasite or fungus called *Trichophyton tonsurans*, which is found in rounded patches from one to two inches in diameter.

These patches are covered with a number of scales, and are generally noticed upon the head, croup, sides of chest and abdomen. It is very contagious, even to man, and is often communicated to the pig through the medium of litter removed from cow sheds.

Treatment.—Isolate at once the diseased from the healthy, and give a dose of the “Red Drench” every third or fourth day, so as to cool and cleanse the system. All combs, brushes, etc., must be cleansed and the sty lime-washed and thoroughly disinfected with the “Globe” Disinfectant. The Ringworm crusts must be first moistened with soft soap, and then removed or broken down with the blunt part of a knife; this done, apply the “Xenos” (a liquid) or, if preferable, the “Ringworm Ointment” once or twice a week. Follow up with a course of the “Kossolian Blood Salt,” and feed well, for as a rule this affection attacks poor or debilitated animals.

SORE TEATS AND UDDERS.

Causes.—This is usually brought about by cold winds or injuries; but may also arise from an over-sensitive skin or Eczema. Sore teats are frequently produced from the sharp tusks of the sucking pigs.

Symptoms.—Cracks and sores are seen on the teat or udder, causing great uneasiness and loss of condition; in some cases a rise in temperature is noticed.

Treatment.—Apply repeated hot-water fomentations, taking care to carefully dry the teats afterwards with a soft cloth. After milking, anoint with the “Sore Teat Lotion” as



Fig. 115. Teat Tube.

directed; this lotion not only cures all cracks and sores, but tends to keep off the flies which are so troublesome in the summer. If there is any obstruction to the teats, a small silver Teat Tube, as depicted above, must be used, it being

specially made for the purpose. This instrument can be left in the teat, and retained in position by means of a tape. Give the animal an occasional dose of the "Red Drench" to cool the system, and feed lightly. Splits and holes in teats are not uncommon; the only cure is to stitch the edges together and anoint daily with the "Sore Teat Lotion" or "Chemical Extract" if the former be not at hand. If the soreness of the teats arises from the sharp tusks of the suckers, these must be nipped off by a pair of sharp pincers. When the above is due to Eczema or Chapping, give the sow a full dose of the "Balsamic Castor Oil," in addition to using the "Sore Teat Lotion," and feed lightly.

SOWS NOT STANDING FOR BOARS.

The following is one of many cases submitted to us for advice and will probably prove interesting to pig breeders:— A correspondent writes: "My sows were in good store condition and farrowed first week in August their first and second litters. The fault was not with boar as he is vigorous, but when sows appear to be in season and are put with the boar they run away. Diet as follows: One good feed per day of barley meal with change to maize, meal and sharps, a run at grass and plenty of green food in the shape of cabbage leaves and green tops of mangolds.

"Young pigs were weaned at *five weeks* so as to get the sows served for early January farrows."

We advised as follows: Sows should be given a gentle stimulus to the generative organs, such as small doses of "Kossolian Blood Salt" three or four times a week, and then twice a week; avoid giving maize during time of administering medicine. Barley meal twice daily with good peas, supplemented with a little green food, cinders, coal, etc. Milk to be made tepid with warm water and to be given regularly; and care to be taken that the troughs be kept clean and drinking water pure. The diet to be changed frequently. This treatment we were told had most gratifying results.

In the majority of cases it is best to employ another boar and to give all sows once daily a dose of "Kossolian," say a week or ten days before serving.

SWINE FEVER, HOG CHOLERA, or RED SOLDIER.

Cause.—Due to a small germ or bacilli which is prevalent wherever swine exist. This pest of the pig keeper has now been taken in hand by the Board of Agriculture, who are making every effort to stamp it out, although, so far, unsuccessfully. It is highly contagious; but one of the most remarkable features of it is the disposition which many animals have of making a complete and sometimes rapid recovery, if suitable remedies are at hand.

Symptoms.—The most prominent symptoms of this malady are the scarlet or purple spots on the skin and mucous membranes, husky cough, loss of appetite, great thirst and prostration, elevation of temperature often as high as 105 degrees Fahrenheit, or higher. Constipation at first, followed by profuse foetid diarrhoea with traces of blood.

Prevention.—When the disease prevails in the neighbourhood, all communication with the infected place should be discouraged, great cleanliness observed, and free use made of the "Globe" Disinfectant about the sties. As healthy animals are less likely to become infected than unhealthy ones, pigs should be kept in good condition by occasional doses of the "Kossolian Blood Salt," for if the *blood* is kept pure and strict attention be given to proper sanitary arrangements, most diseases can be kept at bay.

THE BLOOD.

That complex fluid which constantly circulates through the arteries and veins of all the higher animals is the great medium of exchange, by which materials are supplied for the nourishment of the tissues of the body, and their waste products removed. Physiology and Pathology have advanced from crude theory and superstitious empiricism to exact sciences; schools and systems of medicine have had their rise and fall; Bacteriology, thanks largely to the microscope, has made rapid strides, and yet, during all time since the aged Israelitish law-giver pronounced his famous dictum that "the blood is the life," down to these days of Pasteur, Koch, and other scarcely less eminent Pathologists and Bacteriologists, the blood has universally been regarded as "the vital fluid."

In all debilitating and wasting diseases, where the blood has become unhealthy, the "Kossolian Blood Salt" is imperatively called for. The effect is at once recognized, for it

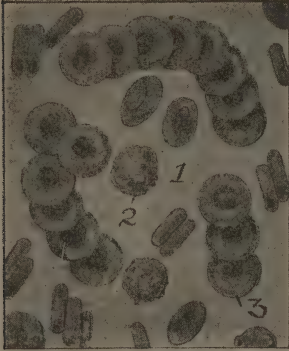


Fig. 116.

HEALTHY BLOOD.

The constituents are:—

1. Clear Serum.
2. White Corpuscles or Leucocytes.
3. Red Corpuscles.

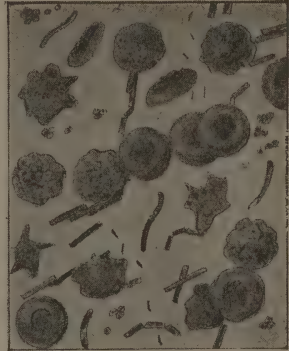


Fig. 117.

UNHEALTHY BLOOD.

In this the Serum is thin and poor. The White Corpuscles altered in shape. The Red Corpuscles flattened and irregular, with broken and crenated edges.

prevents the rupture of the blood vessels and tends to build up the weak ones. This medicine also appears to have the peculiar power of stopping decomposition, while enabling the excretory organs to eliminate all unhealthy products.

THE KEEPING OF PIGS.

Taste in the matter of pig-keeping varies a good deal in different parts of the world, and, indeed, in the British Isles. Those who have wandered about the rural districts of Ireland must have felt that difficulties might arise in any very vigorous attempt to exact a very high standard in the matter. But even in Ireland common consent has accepted a different standard for urban as against purely rural districts. In England and Wales, Section 47 of the Public Health Act, 1875, provides for a penalty against any person who in an urban district keeps any swine or pigsty in any dwelling house

so as to be a nuisance to any person, while Section 91 provides that any animal so kept as to be a nuisance or injurious to health is an offence. Although in England swine are very rarely, if ever, found actually kept in dwelling houses, they are frequently, especially in some districts where the pork industry flourishes, kept under eminently undesirable conditions In many places by-laws have been sanctioned relative to the minimum distance from dwellings at which pigs may be kept, and we believe that a distance of 100 feet has been allowed in some instances. The pig is the victim of what Dr. Ballard, in his classic writings on offensive trades and the like, regards as a mistaken popular prejudice, and this prejudice militates against any trouble being taken to keep pigs in a cleanly state. In Ballard's view the pig is naturally a clean, not a dirty animal, and his wallowing in the mire has for its object cutaneous cleansing, the mud standing to the pig in relation to soap to the human being. This mud when dry caking and falling off and carrying with it the hairs and cutaneous debris which irritate him. Similarly, Dr. Ballard is found in defence of the food habits of the pig. The animal, according to him, does not habitually prefer disgusting food. In the wild state the pig does not eat garbage, but acorns, roots, and fallen fruits. It is said, too, that pigs which are provided with outdoor runs will never foul their beds, and that on very large pig runs, where pigs are provided with shelters for the night, a pig fouling the common bed is very severely handled by his fellows. There can certainly be no question that pigs may easily be kept in a cleanly state in properly constructed sties, and the modern by-laws in reference to pig-keeping have relation more to the method of keeping the pigs than to the position of the sties. *Experience shows that pigs kept in a thoroughly cleanly state thrive better than when in filth, and the nuisance relating to pig-keeping may by the exercise of moderate care be reduced to very small dimensions.*—Lancet.

WEAKNESS, ANÆMIA OR POORNESS OF BLOOD.

Causes.—This often arises from giving too much watery slop food.

Symptoms.—Paleness of the various tissues, great weakness, depression and a jelly-like appearance of the fat. Swellings are often noticed on the belly or other dependent parts of the body.

Treatment.—Small and repeated doses of the “Gaseous Fluid” given in the swill, will soon have the desired effect; or if this is not at hand sprinkle the food with the “Kassolian Blood Salt.” See that the floor of the piggery is kept clean, and sprinkle same freely with the “Globe” Disinfectant.

WORMS.

The principal Worms found in Pigs are:—

1. *Ascaris Suis* or Round Worm.
2. *Trichocephalus Crenatus* or Whip Worm.
3. Tapeworms.

1. *Ascaris Suis*.—This Worm is from 6 to 12 inches in length, creamy white in colour, and is usually found in the stomach and small intestines. It is similar in appearance to the *Ascaris Megalocephalus* of the horse.

Symptoms.—When present in large numbers they produce a voracious appetite, staring coat, restlessness, catarrhal diarrhoea, and in young animals convulsions and often death. Rubbing of the hind quarters and grinding the teeth usually denotes worms in the large intestines.

Treatment.—Give a full dose of the “Broncholine” * in some sloppy meal on a fasting stomach first thing in the morning and repeat in two or three days’ time. Do not give any food or water for a couple of hours after giving the medicine. This should always be followed up in two or three hours afterwards with a light purgative such as the “Balsamic Castor Oil,” so as to help clear the dead and dying parasites from the system. It must not be supposed that because no worms are seen in the dung the treatment should be discontinued, or that there are none present; for hundreds of them die in the intestines after coming into contact with the medicine, and being digested

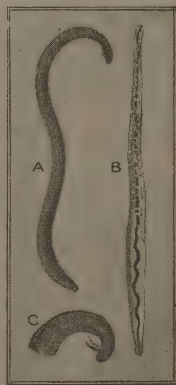


Fig. 118.

Round Worm of the Pig (*Ascaris Suis*).

- A. External view.
- B. Section, showing intestine, etc.
- C. Terminal segments of male, showing spicules.

* If a powder is preferable the “Worm Powder” can be used with equal benefit. Give a dose in a handful of wet meal after a twelve-hour fast: this to be followed, two hours later, by a dose of the “Balsamic Castor Oil,” so as to clear out the dead and dying worms.

are not easily noticed in the fæces. Following this give the "Porcino Pig Powder" as directed in half a feed of nice wash and sharps with a few potatoes mixed in butter-milk, etc., if the patient happens to be low in condition, and allow free access to the coal slack and a run in the paddock if the weather is propitious. If sucking pigs are affected with worms they must be treated through the mother, so she must receive the treatment for expelling them, and this will act on the progeny. See that the bed, also the sties, are generally clean and disinfected occasionally with the "Globe" Disinfectant.

2. *Trichocephalus Crenatus* or Whipworm. This is occasionally found, and the treatment for same would be similar to that under *Ascaris Suis*.

3. *Tapeworms*.—These are seldom seen in pigs; but if any segments of same are seen in the fæces, treat at once as under *Ascaris Suis*.

WOUNDS, SORES, SPRAINS, Etc.

In all recent cases where heat and tenderness are noticed, the affected parts should be fomented with warm water, and, having carefully dried same, apply the "Chemical Extract" once or even twice daily. In treating open wounds, see that the parts are kept free from dirt and grit, and only apply the "Chemical Extract" around the *edges* of the wound, and not to the raw or abraided surface. Bandages soaked in the "Extract" are afterwards very useful in old strains of ligaments, especially if cold water fomentations are employed daily. Feed on light diet.



PRICE LIST





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(REGD.)

THE ANTIDOTE OF PAIN, INFLAMMATION, AND GANGRENE

AN EMBROCATION FOR

Wounds, Kicks, Cuts, Bruises, &c. . . .
 Sores, Chafed Shoulders, Saddle Galls
 Rheumatism or Felon, Swellings . . .
 Broken Knees and Cracked Heels . . .
 Strains of Ligaments and Tendons . . .
 Capped Hocks and Elbows
 Sore Throats, Open Joints, &c.
 For Anointing Ewes during Lambing . .
 For Swollen Udders and Sore Teats . .

IT SOOTHES, HEALS, AND ALLAYS ALL IRRITATION

NOTE: We Prepare Two Kinds of "Chemical Extract" (White and Brown), the former being better adapted for more recent
 ————— injuries, such as Burns, Broken Knees, &c. —————

Sold in Capsuled Bottles: Price 2/6, 3/6 and 7/- each



(REGD.)

THE FINEST ANIMAL RESTORATIVE OF THE AGE
FOR

Fret, Colic or Gripes in Horses
Colds, Chills and Shivering Fits
Hoven or Blown Cattle and Sheep
Scour or Diarrhœa
General Debility in Stock
Ewes Exhausted after Lambing . .
Cows Prostrated after Calving . .
Weakly Foals, Calves and Lambs .

HALF A BOTTLE IN A LITTLE GRUEL ACTS AS A
CAPITAL STIMULANT AND PICK-ME-UP AFTER A HARD
———— DAY'S HUNTING ————

Sold in Bottles : Price 20/- per doz.

"KOSSOLIAN BLOOD SALT"

(REGD.)

.. For ..
HORSES,
CATTLE,
.. and ..
SHEEP



.. For ..
MULES,
GOATS,
.. and ..
PIGS.

SPECIALLY RECOMMENDED FOR

All Blood Disorders, such as Surfeits
Itching, Anæmia, Unthriftness, Humours
Heat Lumps and all Skin Affections
For Indigestion, Sluggishness, etc. . . .
For Weakly Horses and Bad Doers
For Coaxing the Appetite
For Preventing Sterility or Barrenness

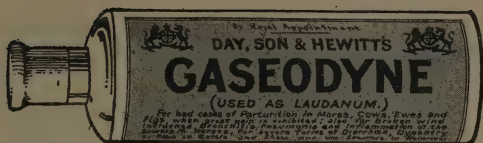
IT QUICKLY PREPARES ANIMALS FOR SHOW OR SALE

"KOSSOLIAN" is a highly concentrated POWDER, which is given sprinkled amongst the food, which medicated in this way goes to excellent account, the nutritive constituents being thoroughly extracted

Sold in Tins with Measure :

Price 10/6 and 20/- ; $\frac{1}{4}$ -cwt. 45/-* ; $\frac{1}{2}$ -cwt. £4

* This Tin contains more than Six Half-Guinea Tins, value 3 Guineas



(REGD.)

FOR

Bad Cases of Lambing and Calving
Severe Heaving, Paining or Straining
Influenza or Pink Eye
Bronchitis, Pneumonia, Gastritis
Slipping or Abortion
Dysentery or Flux in Cattle and Sheep
Inflammation of Bowels in Horses
All Severe Internal Complaints

USED AS LAUDANUM FOR LULLING PAIN,
 AND SOOTHING THE NERVOUS SYSTEM

Price 3/6 per Bottle



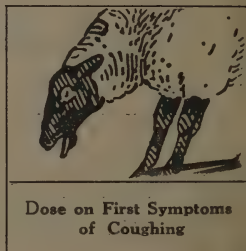
THE GREAT PARASITIC REMEDY For CALVES AND LAMBS



SPECIALLY RECOMMENDED FOR

Parasitic Husk or Hoose . . .
Coughs, Bronchial Irritation, &c.
Lungworms, Tapeworms, &c. . .
It Destroys all Parasitic Worms
Eases the Distressing Cough . .
Assists Natural Breathing . . .

IMPORTANT.—When ordering kindly state age and number of animals affected, so that the correct quantity may be sent. A Quart Tin is sufficient to dose approximately 84 Lambs or 30 Calves once only . . .



Sold in Tins :

QUART 10/6; $\frac{1}{2}$ -Gall. 20/-; 1 Gall. 38/- Also sold in Bottles, 2/9 each



(REGD.)

A SCOUR MIXTURE .. For all Animals ..

INVALUABLE FOR

“Flux,” White or Green Skit

“Curd” in the Stomach

Scour, Diarrhoea and Dysentery . .

It stops “Griping” pains

It neutralizes Acidity of the Bowels

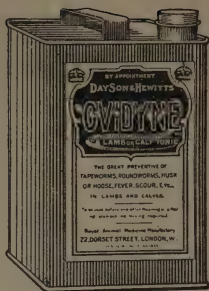
NOTE.—The “Curdolix” is given just as it is—no mixing required. It warms the stomach and soothes the irritated membranes. A Quart tin is sufficient to dose about 50 Lambs
——— or 25 to 30 Calves ———



DOSE FOR A LAMB:
One Table-spoonful

QUART TIN, 7/6; $\frac{1}{2}$ -Gall. 14/-; 1 Gall. 26/-

Also sold in Bottles, 2/- & 4/- each



“OVIDYNE” (REGD.)

THE GREAT LAMB OR CALF TONIC

TO BE USED BEFORE AND AFTER WEANING
 It expels all Stomach and Intestinal Worms
 It prevents Husk, Fever, Scour, &c.
 It acts as a capital Tonic and Stimulant
 It is a wonderful preparation for destroying
 all parasitic germs, and improving
 the general health of Lambs and Calves

APPRECIATION !!

Mr. JNO. SANDISON, Beaconsfield (Bucks)

writes :

“Please send another gallon of ‘OVIDYNE’ at your very earliest, for my Lambs are already suffering from Tapeworms, and if I don’t get it I know I shall lose half of them. I have never lost a single Lamb after dosing with the above, and never saw anything act so quickly—it is marvellous”



“OVIDYNE” is given exactly as it is, no mixing with gruel — or milk being necessary — A DRENCHER (denoting the exact dose) is sent gratis with each order

Price 16/- per Gallon (sufficient to dose about 60 Calves or 106 Lambs once)
 2 Galls. 30/-; 3 Galls. 43/6; 4 Galls. 56/-



FOR ALL UDDER TROUBLES In Mares, Cows, Ewes and Goats

For Garget or Hard Quarters . . .
Colds, Chills and Inflammation
Strangles and Influenza
Felon or Rheumatism in Horses
Warding off Lung and Kidney disorders

Specially recommended for reviving animals
suffering from the effects of exposure or cold

Mr. JAS. LEWIS, Tiverton, writes :

"I think the 'Vetalenta' the best remedy for all
Udder Troubles that I have ever used, and for
Inflammatory Diseases **there is nothing like it.**
It is without doubt a most excellent Life-saver"

Sold in Tins: QUART, 6/6; $\frac{1}{2}$ -Gall. 12/-; 1 Gall. 22/-
Sample Bottles, 2/6 (A Quart Tin is equivalent to three 2/6 Bottles)

. Non-
Poisonous



Cheap and
Effective

A POWERFUL GERMICIDE

For washing out Stables, Cattle
Sheds, Piggeries, Kennels, Sinks,
Drains, &c., thus warding off and
. . . killing Parasitic life . . .

It is a strong Antiseptic for
cleansing and healing all Cuts,
. . . . Wounds, &c. . . .

PERFECTLY SAFE FOR HOME USE

Price : $\frac{1}{2}$ -Gallon 3/-; 1 Gallon 5/-; Sample Tin 1/-
. . . Also in Drums : 5 Gallons 20/-; 10 Gallons 35/- . .



“ANTI-FLY” DRESSING

Invaluable for driving off “Flies”
from Horses, Cattle and Sheep, thus
preventing them from depositing
their Eggs, which develop into Warbles
It heals Shear Cuts, Sores, etc. . . .
It is Antiseptic and Non-Poisonous

The “Warble Fly” causes Cows to gallop
about and become wild with fright, which
invariably means *great loss of milk* due
to an elevation of temperature and excite-
ment. A Cow anointed with “Anti-Fly”
can graze in perfect peace and comfort



Adult Warble Fly
(life size)

Sold in Tins (Carriage Paid) :

$\frac{1}{2}$ -Gall. 5/6 ; 1 Gall. 10/- ; 3 Gall. 25/- (Brushes 6d. each)



FOR HORSES, CATTLE, SHEEP & PIGS

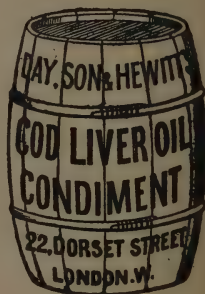
For Ensuring Healthy Digestion & Stamina

For Warding off all Lung Troubles . .

For Preventing Tuberculosis in Cattle

For Making Firm Flesh

N.B.—This Preparation is made from Pure Norwegian Cod Liver Oil, Linseed Oil, and Malt Extract, and other highly nutritious and dietetic ingredients



Price 26/- per gross Packets

Also CONDIMENT in Casks, $\frac{1}{2}$ -cwt. 22/-; 1 cwt. 42/-; $1\frac{1}{2}$ cwt. 60/-



A GRUEL FOR HORSES

For reviving Tired Hunters
 For refreshing Coach Horses
 For sustaining Horses going Long Journeys
 For Draught Horses doing Heavy Work
 For preventing Gripping and Colic . . .
 For giving Stamina and restoring Appetite
 For Gruelling Sick or Invalid Stock . .

N.B.—The M.O.G. is invaluable for mixing with medicine where
 ————— a Gruel is necessary —————

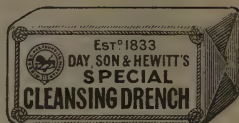
Price 12/- per gross Packets

Sample Box containing 6 doz. Packets 7/-

DRENCHES

CLEANSING DRENCH

For safely and effectually expelling the "Afterbirth" or "Cleansing" of Mares, Cows and Ewes, and preventing Parturient Septicæmia or Blood Poisoning



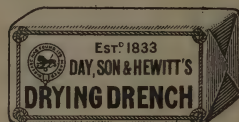
FELON DRENCH

For Chine Felon, Joint Felon or Rheumatism affecting Horses, Cattle, Sheep and Pigs



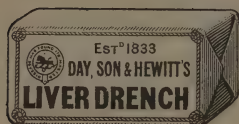
DRYING DRENCH

For gradually diminishing the secretion of milk without the slightest risk or injury to the system or liability to Garget or Inflammation of the Udder



LIVER DRENCH

For correcting disorders of the Liver, such as Jaundice or Yellows; and for Ill-condition of the Skin, Foul Breath and Indigestion in Horses, Cattle and Sheep



All the above, Price 13/- per dozen Packets
Also sold in Tins, 12/- and 23/- each



For all Sores and Wounds on the Udders or Teats of Cows and Ewes; it is also useful in slight cases of Garget or Inflammation of the Udder.

2/6 per Bott.; Quart Tin 10/6



A warm and soothing Stomachic for Scour or Diarrhoea and most Bowel Complaints, quickly counteracting Acidity of the Stomach and Flatulency

Price 1/9 per Bottle



A safe cure for Foot Rot in Sheep, Foul or Loo in Cattle, and Thrush and Canker in Horses' Feet.

2/6 per Bott.; Quart Tin 10/6



A mild laxative for Costiveness in young Stock. Useful in Scour or Diarrhoea for removing "Curd," &c.

1/6 per Bott.; Quart Tin 6/-



For anointing after bad Lambing or Calving. This preparation should be freely employed in cases of Heaving or Straining, to neutralize all decomposing organic matter, which so often causes Inflammation and Gangrene of . . . the Womb . . .

2/6 and 3/6 per Bott.; Quart 7/-



Specially adapted for hardening delicate or sensitive Skins of Horses, and for healing sores or abrasions caused by badly fitting collars. As a rule, Sore Shoulders, &c., arise from impure blood, therefore an occasional dose of "Kossolian Blood Salt" should always . . . be given . . .

Price 2/6 per Bottle



A Concentrated Chill or Fever Drink for HORSES, CATTLE, SHEEP and PIGS

For Colds, Chills and Shivering Fits, and exciting perspiration in Feverish Complaints; and it acts also as a safe and gentle Stimulant to the urinary organs in cases of Thick Water, &c. This preparation lowers the temperature of animals without causing any stomachic disturbance afterwards



Price 2/6 per Bottle; Quart Tin 10/6; $\frac{1}{2}$ -Gallon 21/-



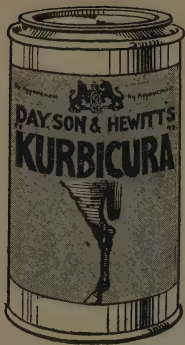
THE COUGH ELECTUARY For HORSES, CATTLE & SHEEP

This preparation, being a treacly paste, forms one of the simplest and most efficacious methods of giving a medicine. Merely place a small piece at back of tongue once or twice daily by means of a Spatula (supplied gratis)

It instantly stops irritation of the Throat and Lungs; also useful in mild cases of
Asthma, Broken Wind, Pleurisy,
. . Bronchitis and Pneumonia . .



Price 4/- and 7/6 per Tin (Three 7/6 Tins for 20/-)



“KURBICURA”

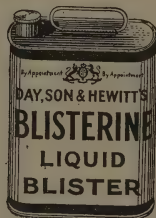
Specially recommended for Enlarged Joints, Sprung Tendons and Swollen Glands in Horses and Cattle. It cures by absorption, is perfectly safe, and does not blister or blemish, nor necessitate taking the Horse off work. “KURBICURA” does away with the hot iron and firing

Price 4/- and 7/6 per Tin

“BLISTERINE”

A Compound Liquid Blister for Chronic Sprains of Tendons and Ligaments, Spavins, Ringbones, Sidebones, Curbs, and all Bony or Bursal Enlargements

Quart Tin 10/6 ; $\frac{1}{2}$ -Gall. 20/- ; Bottles 3/6



COUGH DRINKS

For Coughs, Influenza, and mild cases of Broken Wind, Asthma and Whistling . . . in Horses and Mules . . .

FEVER DRINKS


For Feverish and Inflammatory Disorders, also for Colds, Chills and Shivering Fits . . . in Horses and Mules . . .

PURGING DRINKS

For relieving Stoppage or Constipation . . . in Horses and Mules . . .



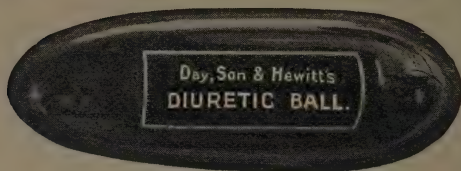
DIURETIC DRINK. For absorbing dropsical and other swellings of the body or legs, and gently stimulating the Kidneys in cases of Thick Water, &c.

NOTE : These Drinks are mixed ready for immediate use 

Price 18/- per dozen

GELATINE-COATED

HORSE BALLS



BLACK PHYSIC. For Constipation, or Stoppage of the Bowels in Horses, Swollen Legs and Torpid or Gross State of the System arising from full habit or too much flesh

CONDITION. For general Ill-Condition, Off-Appetite, Hide-bound, Swollen Legs, Staring Coat, Humours, Indigestion, and Lampas in Horses

WORM. For quickly expelling all Intestinal Worms in Horses, Mules, &c., without injuring the system

DIGESTIVE. For Indigestion in Horses, rendering the food better assimilated, and stimulating the digestive . . . organs to increased action . . .

FEVER. For checking feverish or Inflammatory Symptoms in Horses after getting wet or during disease. Wards off Colds and steadies the Nerves

DIURETIC. Highly beneficial for derangements of the Bladder and Kidneys in Horses, and for Difficult Staling and Thick Water. They are also well adapted for Swelling of the Legs

COUGH. For Coughs and Colds, and for some of the milder forms of Asthma and Broken Wind in Horses, Mules, &c. . . .

GREASE. For Grease, Farcy Buds, Foul Ulcers, Thrush and Cracked Heels in Horses, Mules, &c.

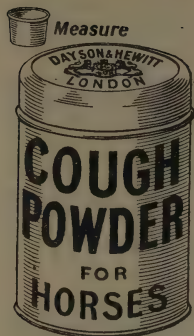
CONSTITUTION. They quickly strengthen the constitution, and counteract the injurious results of . . . over-feeding and exertion . . .

CORDIAL. For preventing Chills, Colic, Gripes or Inflammation in Horses. Recommended as a Restorative after . . . fatigue or over-work . . .

N.B.—Any of the above can be supplied in Powder form

All the above, 6/- per dozen; 3 dozen 17/-; 6 dozen 32/-

HORSE POWDERS



WORM POWDERS
 COUGH ,,
 GREASE ,,
 DIURETIC ,,
 ALTERATIVE ,,
 INFLUENZA ,,

Price 7/6 per Tin; Half-size Tin, 3/9

RED CONDITION POWDER

Recommended after a hard day's hunting or driving, and for Staring Coat, general Ill-condition, and want of vigour and animation. These Powders give firmness of flesh, increase the appetite, and . . . impart energy to every organ . . .



Price 7/6 per doz.; 3 doz. 21/-; in Tins, 20/- each

PICK-ME-UP POWDERS

— FOR HORSES —



These Powders sustain the flagging energies after a hard day's work, and will be found of immense value to Delicate Feeders

Price 18/- per Gross



For Ringworm in Horses, Cattle, &c. A few doses of the "Kossolian Blood Salt" should also be given

Price 2/6 and 5/- each



For Mange, Mallenders, Sallenders and Itching in Horses, Cattle, Sheep and Pigs

Price 2/6 and 5/- each



For Sore Throats, Spavins, Old Swellings of Joints or Ligaments, Curbs, Sidebones, Ringbones, Splints, &c.

Price 2/- and 4/- each



For Thrush and Canker in Horses. For Loo or Low in Cattle, and Foot Rot in Sheep

Price 2/6 and 5/- each



For Sore Lips in Cattle and Sheep. It quickly allays . . . irritation . . .

Price 2/6 and 5/- each



For Grease and Farcy Buds, Foul Ulcers, Thrush, and bad cases of Cracked Heels

Price 2/6 and 5/- each



For Brittle Feet, Sandcrack, Seedy Toe, Laminitis and Diseased Frog in Horses

Price 4/- and 7/6 each



For Sore Shoulders, Saddle - Galls, Speed Cracks and Mud Scalds, in Horses and Mules

Price 1/- and 2/- each



For Ophthalmia or Inflammation of the Eyes in Horses and Cattle, and "Blinds" in Sheep

Price 2/6 and 5/- each

WASHES



“MAGGOTINE”

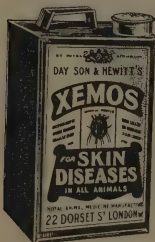
A safe and non-poisonous preparation for killing Maggots in Sheep and healing all wounds and sores caused by flies ; it, furthermore, protects all infected parts from future attacks of these pests. The “Maggotine” does not damage the wool, but helps it to retain its natural colour

Price, $\frac{1}{2}$ -Gallon 5/6 ; 1 Gallon 10/-

MANGE OR LICE WASH

A safe and efficacious wash for Mange, and for destroying all parasites on Horses, Cattle, Sheep and Pigs

Price, $\frac{1}{2}$ -Gallon 4/- ; 1 Gallon 7/6



“XEMOS”

This dressing, when used as directed, is invaluable for most Skin Diseases in all animals, such as

Mange, Eczema, and Sweetitch, or Irritation of the Skin, Mane and Tail. Specially suitable for Irritation causing Stamping of the feet

Price, Quart 4/- ; $\frac{1}{2}$ -Gall. 7/6 ; 1 Gall. 14/-

“DERMOLINE”

A Cattle Shampoo (non-poisonous). It cleanses the Skin, prevents Scurf, Lice, and promotes growth of Hair. Invaluable for washing and preparing Cattle for Exhibition or Sale Ring. It produces a velvet-
 like condition of coat

Sold in Tins, 1 Gall. 7/6 ; 2 Galls. 14/-



OTHER PREPARATIONS

RED WATER-SPECIFIC. For Red Water, Darn, Moor-Ill or Dry Murrain in Cows and Sheep. Immediate treatment is necessary, for as a rule this disease runs its course very rapidly

Price 2/3 per Bottle ; 26/- per dozen

COUGH ELIXIR. For Coughs, Colds, Shivering Fits, Influenza, Bronchitis, Pleurisy, and the early stages of Pneumonia in Horses, Cattle and Sheep

Price : Quart 5/6 ; $\frac{1}{2}$ -Gallon 10/6 ; 1 Gallon 20/-

"RED WORM" MIXTURE. For expelling Red or Blood Worms from young Horses. These parasites being very debilitating, the Cod Liver Oil Powders are strongly recommended

Price 2/6' and 5/6 per Bottle

"SOLVAX." For preventing "Wool or Curd Balls" in Sheep and Lambs, and "Hair Balls" in Calves. It instantly arrests Inflammatory Diseases of the Stomach and Intestines

Price : $\frac{1}{2}$ -Gallon 4/6 ; 1 Gallon 8/- ; 2 Gallons 15/-

LOTION FOR WHITES (Cows). Specially prepared for Leucorrhoea or, as it is generally termed, "Whites" in Cows, which is characterized by a milky white discharge from the Vulva

Price 3/- per Bottle. Special Syringe, 1/6 each

LOUPODYNE. For preventing and curing mild cases of Louping-Ill, Stomach Staggers and Braxy in Sheep

In Tins : Quart 7/6 ; $\frac{1}{2}$ -Gallon 14/- Sample Bottle 2/-

"VACCOMA" REGD. (Milk Fever Cure). For severe cases of Milk Fever or Dropping after Calving

Price 1/9 per Tin ; $\frac{1}{4}$ -dozen 5/-

SPECIAL ANTISEPTIC DRESSING. For anointing after Castration, and for Navel-Ill or Joint-Ill in Foals, Calves and Lambs

Price 2/6 and 3/6 per Bottle. Quart 7/-

CUD BALLS FOR COWS. Specially prepared for cases of "Lost Cud" in Cattle ; but will be found equally serviceable for giving tone to the digestive system and improving the appetite

Price 3/6 per dozen. 3 dozen 10/-

OTHER PREPARATIONS

EYE WASH. For Ophthalmia or Inflammation of the Eyes affecting Horses, Cattle and Sheep, arising from colds, injuries, &c.

Price 2/6 per Bottle

TÆNOLINE. For Fever, Tapeworm, Husk or Hoose, Scour or Diarrhoea, and all Stomach and Intestinal Worms in Lambs and Calves. This is practically the same as the OVIDYNE (see page 10), only in Powder form instead of Liquid

Sold in Tins: 10/6, 20/- and 40/- each

ALUMINE. For Aphtha, Thrush and Lampas affecting the mouths of Horses, and for Sore Mouth, Blain, and Foot and Mouth Disease of Cattle and Sheep

Price 1/6 per Bottle. $\frac{1}{2}$ -dozen Bottles 8/6

WARBOLINE. An Ointment for safely and effectively destroying Warbles or Maggots in the Hides of Oxen

Price 2/- and 4/- per Jar

FETOLIX. A Hair Stimulant for Shire Horses' Legs. Safely and effectually promotes the growth of "Feather," so much desired in the heavier breeds of Horses

Price 3/6 per large Bottle (with Sprinkler)

ABORTION MIXTURE. For cases of Slipping or Abortion in Cows, and equally serviceable as a preventive and cure of Vaginitis, also Inflammation of the Womb in Cows and Ewes after difficult Calving and Lambing

In $\frac{1}{2}$ -Gallon Jars 5/6; 1 Gallon 10/-

COOLING LOTION. A most soothing preparation for recent Strains or Sprains of Ligaments or Tendons, and Inflamed Surfaces. Equally beneficial for Bruises, Swellings, Cuts and Sore Shoulders

Sold in Pint Champagne Bottles, 20/- per dozen

SPECIAL ANTISEPTIC OINTMENT. For applying after Castration to Bulls, Lambs and Pigs. Also for Sores, Wounds, &c.

Price 1/- and 2/- per Tin (Sample Tin 6d.)

SPECIAL WART SOLVENT. For Horses, Cattle, &c.

Price 2/6 per Bottle

SPECIAL UDDER SALVE. For all cases of Cow-Pox, Felon in the Udder, Sheep-Pox, and Sores or Injuries to the Teats

Price 2/- and 4/- per Tin (Sample Tin 1/-)

SPECIAL TIMBER or WOODEN TONGUE CURE.

Price 2/6 per Bottle

PIG MEDICINES

Prevents . . .
Swine Fever or
Hog Cholera .



Keeps Pigs . . .
in fine . . .
Condition . . .

USES GENERALLY

Fever and Inflammatory Disorders
Skin Eruptions
Colds, Influenza and Fits
Urinary Disorders
Sows before and after Farrowing

Price *7/6, 20/- and 40/- per Tin. Also 2d. Packets, 20/- per Gross

*This Tin holds the equivalent of five dozen Packets = 10/-



THRIVING POWDERS (Pigs)

For rapidly hastening the fattening process and giving Pigs a keen appetite. It prevents the injurious results of over-feeding, and renders the food easily assimilable, causing . . . every particle of nourishment to be extracted . . .

Price *4/-, 7/6 and 20/- per Tin. Also in Packets, 10/- per Gross

*This Tin holds the equivalent of five dozen Packets

WORM POWDER FOR PIGS

This Powder is safe and effectual for expelling Internal Parasites or Worms in Pigs. It is a fairly good sign that a Pig has Worms if he fails to thrive in spite of a big or voracious appetite, is dull, grinds his teeth, and has a dry and scurfy skin



Price 3/9 and 7/6 per Tin; Packets, 2/- per doz., 20/- per gross



For Parasitic Coughs in Pigs, and expelling Worms from the Stomach and Intestines. It can be given either in the swill or as a drench

Price 1/6 and 2/6 per Bottle; Quart 10/6

COUGH ELIXIR (PIGS)

For ordinary Coughs; also Colds, Shivering Fits, Influenza, Bronchitis, Pleurisy, and the early stages of Pneumonia



Price 5/6 per Quart; 1/2-Gall. 10/6



DOG MEDICINES



KOSSOLIAN BLOOD SALT PILLS

Undoubtedly the Finest Blood Purifier and General Tonic for DOGS and CATS that veterinary skill and science have brought to light

For Blood, Stomach and Skin Disorders, including Anæmia, Sluggishness, Indigestion, Itching, &c. They quickly impart New Life and Vigour to all Sickly Animals "KOSSOLIAN" acts as an excellent Tonic for animals recovering from Distemper, &c. Excellent for Bad Doers and Dogs that become dull and gross through want of exercise and over-feeding

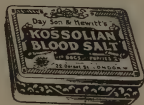
SPECIALLY RECOMMENDED FOR PREPARING DOGS AND PUPPIES FOR SHOW OR SALE. THEY GIVE BRIGHT EYES, GLOSSY COAT, AND GLOWING HEALTH



FOR
TOY DOGS
SUCH AS

Pekinese, Toy Spaniels,
Yorkshire Terriers, &c.

Price 1/7 and 2/6
3 Gross 6/6; 6 Gross 12/6



FOR
**NON-SPORTING
DOGS**
SUCH AS

Bull Dogs, Great Danes,
Newfoundlands, &c.

Price 2/6 and 6/6
3 Gross 18/6; 6 Gross 33/-



FOR
SPORTING DOGS
SUCH AS

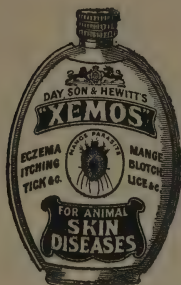
Retrievers, Setters, Grey-
hounds, Pointers, &c.

Price 2/6 and 6/6
3 Gross 18/6; 6 Gross 33/-

"KOSSOLIAN" is also sold in POWDER form for mixing with the food. Price 4/- per Tin

SKIN DISEASES IN DOGS

. A MOST .
EFFECTIVE
. REMEDY .



. SAFE .
.. AND ..
SOOTHING

For Mange, Eczema, Ringworm, Blotch, &c., in Dogs and Puppies there is nothing to equal "XEMOS." It quickly stops Irritation, and will be found an excellent Hair Stimulant to bare patches caused through Skin Affections and scratching. Also recommended for Ticks and Fleas

Mr. C. CRAMPTON, Newark-on-Trent, writes :

"I think it only right you should know the 'Xemos' has completely cured the Retriever suffering with Eczema. This is really remarkable considering the age of the dog and how often his complaint has been recurring. Everyone said at the onset cure was impossible"

Price 1/- and 3/6 per Tin (Postage 3d. extra)

N.B.—When treating Pet House Dogs and Cats, a non-oily and odourless preparation is sometimes preferred to the "Xemos" in cases of Eczema, Surfeit or Red Mange when the Skin is rather tender. The "ECZEMA LOTION" is then recommended Price 1/2, 2/6 & 5/- per Bottle



DOG AND PUPPY PILLS

(Gelatine-coated—tasteless)

APERIENT
ASTRINGENT
COUGH & ASTHMA
LIVER or JAUNDICE

RHEUMATIC
WORM
DISTEMPER
FEVER

All the above, 1/1, 2/6 and 5/- per Bottle, Post free



"VERMOLIX"

(Liquid Worm Cure)

For Round, Thread or
Tape Worms in Terriers,
Toys, Puppies and Cats.
An occasional dose is an
excellent preventive

Price 1/- (Postage 2d.), 2/6 and 5/- per Bottle

EAR CANKER LOTION

This lotion is adapted
for most cases of Canker,
and contains soothing and
healing properties



NOURRICE



This is practically
bitch's milk, both in
taste and nourishment.
Only takes a few min-
utes to prepare and is
more nourishing than
cow's milk

Sold in Tins :
1/3, 2/9, 5/- & 10/-

DRY SHAMPOO

FOR DOGS



Quickly gives the coat a
glossy and clean, wholesome
appearance, without the risk
of catching a chill afterwards.
No soap or water required

Sold in Tins :
1/- each (Postage 1d.)

SO-NYCE



A complete food for
Dogs suffering or
recovering from Dis-
temper or any other
debilitating disease. It
improves the quality
of the bitch's milk

Sold in Tins :
1/3, 2/9, 5/- & 10/-

DOG MEDICINE CHEST (complete), 20/-

see page 45

DISTEMPER CURE

FOR DOGS



A safe preparation for Distemper, preventing after complications. It quickly reduces Fever, and contains tonic and sustaining ingredients.

COUGH MIXTURE

FOR DOGS



For Coughs, Colds, and Irritation of the Throat or Lungs in Dogs and Cats. Also for cases of Bronchitis, Asthma and Pneumonia



LIQUID SHAMPOO

Cleanses the Skin, stimulates the growth of hair, and improves the appearance of the coat. Harmless to the tenderest skin



BROWN EMBROCATION

For Cuts, Bruises, Sore Throats, Tumours, Sore Feet or Torn Ears, Rheumatism, and Sprains and Strains to Tendons



ANTI-DISTEMPER MIXTURE

A safe remedy for preventing Distemper, before, during or after Shows. Harmless to the most delicate breeds



"VITAX" (Tonic Mixture)

For bracing up the system when recovering from Distemper or any other debilitating disease. An excellent Pick-me-up



EYE LOTION

For Diseases of the Eye in Dogs and Cats, including Inflammation or Ophthalmia and Cloudiness. Gives instant relief and quickly reduces the inflammation



DIARRHOEA MIXTURE

It warms and soothes the stomach and neutralizes all acidity of the bowels, so often the cause of Indigestion, Scour, Vomiting, Foul Breath, Flatulency, &c.

All the above 1/- (Postage 2d.), 2/6 and 5/- per Bottle



POULTRY MEDICINES



KOSSOLIAN BLOOD SALT



For POULTRY, PIGEONS, PHEASANTS, &c.
This unique preparation has a special action on the Blood and System generally, and is undoubtedly the finest Blood Purifier and Tonic ever introduced. Specially recommended for Birds Moulting. It assists the vitality of Poultry Stock and ensures fertile eggs. For laying birds it is very beneficial and will greatly increase the standard of egg production. A course of "Kossolian" ensures luxuriant feather growth and promotes sheen and symmetry so necessary for exhibiting purposes

Price 1/2, 2/9 and 4/- per Tin, post free. Three 4/- Tins for 11/-

ROUP & CATARRH POWDER

A safe and reliable cure for Roup, Diphtheria, Colds, &c., and is an excellent preventive if given occasionally . . . in the drinking water . . .

Price 1/1, 2/6 & 5/- per Bottle

TICK & INSECT POWDER

Kills all parasites infesting the body and feathers of Poultry, Game, &c. All coops should be sprinkled with this harmless preparation at sitting time

Price 1/1 per Tin, post free

EGG MULTIPLIER POWDER

For mixing with the morning food. It invigorates the most delicate bird, and increases . . . the production of eggs . . .

1/3 per Packet; 12/- per dozen



CHICKEN POWDER

For giving Vitality, Strength and Warmth to Chicks during inclement . . . weather. Helps them to feather quickly . . .

1/3 per Packet; 12/- per dozen

POULTRY MEDICINE CHEST—Price 15/- . . . see page 46

"POULTRIX" For POULTRY

This specially prepared Aperient is perfectly safe, and never constipates afterwards. It is admirably adapted for Egg Bound,
Liver Diseases, &c.



Price 1/3 per Tin, 12/- per dozen

YELLOW OINTMENT. For Scaly Legs, Red Mite, Comb Diseases, and Skin Affections

GAPE MIXTURE. For curing and expelling all Parasites from throat and lungs, such as Gapes, &c.

EMBROCATION (Brown or White). Invaluable for Cuts, Bruises, Sore Feet, Cramp or Rheumatism

"VITAX." A Liquid Tonic for bracing or toning up the system of Birds recovering from debilitating diseases

COUGH MIXTURE. For Colds, Coughs and Pneumonia

LIVER PELLETS. For Liver Disorders or Jaundice

ROUP & CATARRH PELLETS. For Roup, Diphtheria, Colds, &c.

DIARRHŒA PELLETS. For Foul Vent, Cholera, and Dysentery

LEG WEAKNESS PELLETS. A safe remedy for Leg Weakness

GAPE PELLETS. For safely expelling the Gape Parasites

Also **COD LIVER OIL & QUININE CAPSULES, CHEMICAL FOOD CAPSULES, CASTOR OIL CAPSULES, and CAPSULES FOR PIP**

All the above, 1/2, 2/6 or 5/-, post free

CONTENTS

. . . OF . . .

DAY, SON & HEWITT'S

"Original"

MEDICINE CHESTS

FOREIGN or COLONIAL BUYERS

See pages 47-49

“ ORIGINAL ” STOCK-BREEDERS’

N^o1



CONTENTS :

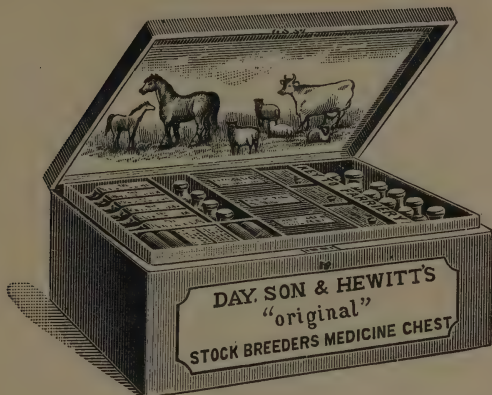
1	dozen	Bottles	Gaseous Fluid	..	..
$\frac{1}{2}$	dozen	Bottles	Chemical Extract	..	..
1	dozen	Packets	Red Drench	..	..
$\frac{1}{2}$	dozen	Packets	Cleansing Drench	..	..
$\frac{1}{4}$	dozen	Packets	Felon Drench	..	..
$\frac{1}{4}$	dozen	Packets	Drying Drench	..	..
$\frac{1}{2}$	dozen	Packets	Condition Powders	..	..
3	dozen	Assorted	Horse Balls	..	..
2	Bottles	Gaseodyne	.. ..	..	..
2	Bottles	Broncholine	.. ..	..	..
1	Bottle	Alcoholic Ether	.. ..	..	..
1	Bottle	Balsamic Castor Oil	.. ..	..	..
1	Bottle	Vetamenta	.. ..	..	..
1	Bottle	Curdolix	.. ..	..	..
1	Tin	Worm Powders	.. ..	..	..
1	Tin	Sulphuretted Ointment	.. ..	..	..
1	Tin	Azodyne	.. ..	..	..
1	Tin	Blister Ointment	.. ..	..	..
1	Tin	Easakof	.. ..	..	..
1	Tin	Kossolian Blood Salt	.. ..	..	..
1	copy	“Veterinary Practice at Home”			

DOUBLE SIZE :
10 GUINEAS

£6 6 0

“ORIGINAL” STOCK-BREEDERS’

N^o 2



CONTENTS :

1 dozen	Bottles Gaseous Fluid	..	..
$\frac{1}{2}$ dozen	Packets Red Drench	..	..
4	Bottles Chemical Extract	..	..
1	Bottle Gaseodyne	..	..
1	Bottle Broncholine	..	..
1	Bottle Alcoholic Ether	..	..
1	Bottle Curdolix	..	..
$\frac{1}{2}$ dozen	Red Paste Balls	..	..
$\frac{1}{2}$ dozen	Black Physic Balls	..	..
1	Tin Kossolian Blood Salt	..	..
1	Tin Easakof	..	..
1	copy “Veterinary Practice at Home”		

HALF SIZE :
28/9

£2 16 6

“ORIGINAL” HORSE-KEEPERS’

Nº 3



CONTENTS :

1 dozen Bottles Gaseous Fluid	..	..
4 Bottles Chemical Extract	..	..
1 Tin Kossolian Blood Salt	..	..
2 Bottles Gaseodyne	..	..
2 Bottles Alcoholic Ether	..	..
1 Bottle Blisterine	..	..
1 Bottle Balsamic Castor Oil	..	..
1 Bottle Curdolix	..	..
2 dozen Assorted Horse Balls	..	..
1 Tin Worm Powders	..	..
1 Tin Diuretic Powders	..	..
1 Tin Easakof	..	..
1 Tin Kurbicura	..	..
1 Tin Hornicura	..	..
1 Tin Gall Cure	..	..
1 copy “Veterinary Practice at Home”		

DOUBLE SIZE:
9 GUINEAS

£5 5 0

“ORIGINAL” HORSE-KEEPERS’

Nº 4



CONTENTS :

$\frac{1}{2}$	dozen	Bottles	Gaseous Fluid ..	..	..
$\frac{1}{4}$	dozen	Bottles	Chemical Extract ..	..	..
$\frac{1}{2}$	Tin	Worm	Powders ..	..	..
1	Tin	Kossolian	Blood Salt ..	..	..
1	Bottle	Alcoholic	Ether ..	..	..
1	Bottle	Blisterine	..	..	..
$\frac{1}{2}$	dozen	Red Paste	Balls ..	..	..
$\frac{1}{2}$	dozen	Black Physic	Balls ..	..	..
$\frac{1}{2}$	dozen	Grease	Balls ..	..	..
$\frac{1}{2}$	dozen	Cough	Balls ..	..	..
$\frac{1}{2}$	dozen	Diuretic	Balls ..	..	..
1	Bottle	Gaseodyne	..	..	..
1	Tin	Easakof	.. ..	..	..
1	Tin	Hornicura	.. ..	..	..
1	copy	“Veterinary Practice at Home,”			gratis

POLISHED CHEST GRATIS

£2 17 6

“ORIGINAL” HORSE-KEEPERS’

Nº 5

This Chest contains approximately half the
contents of the No. 4 above.

£1 10 0

“ ORIGINAL ” COLLIERY-OWNERS’

Nº 6



CONTENTS :

3	Bottles	Chemical	Extract	..	..
$\frac{1}{2}$	dozen	Bottles	Gaseous Fluid	..	..
$\frac{1}{4}$	dozen	Bottles	Alcoholic Ether	..	..
1	Tin	Worm	Powders	..	..
1	dozen	Grease	Balls	..	..
1	Bottle	Blisterine	..	..	..
1	dozen	Cough	Balls	..	..
1	Tin	Gall	Cure	..	..
1	Bottle	Antiseptic	Dressing	..	..
1	Tin	Kossolian	Blood Salt	..	..
1	Quart	Linseed	Oil	..	..
1	lb.	Sulphur	..	..	..
1	lb.	Saltpetre	..	..	..
1	Set	of	Bandages	..	..
1	copy	“ Veterinary Practice at Home ”			

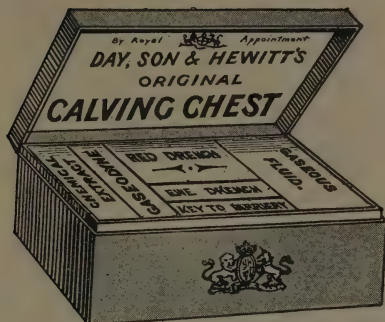
SPECIALLY SUITABLE FOR PIT-PONIES
POLISHED CHEST GRATIS

£3 3 0

"ORIGINAL"

CALVING CHEST

Nº7



CONTENTS :

2	Bottles	Brown Chemical Extract	..
1	Bottle	White Chemical Extract	..
1	dozen	Bottles Gaseous Fluid	.. ..
1	dozen	Packets Red Drench	.. ..
½	dozen	Packets Special Cleansing Drench	
1	Bottle	Gaseodyne	.. .. .
1	Bottle	Broncholine	.. .. .
1	Bottle	Vetalenta	.. .. .
1	Bottle	Balsamic Castor Oil	.. .. .
1	Bottle	Carminative Chalk	.. ..
1	Bottle	Curdolix	.. .. .
1	copy	"Veterinary Practice at Home"	gratis

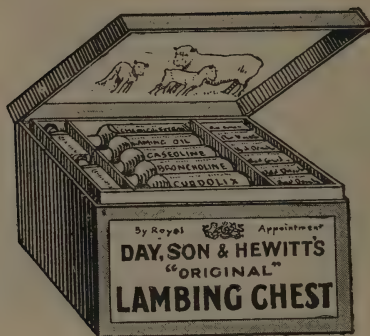
SMALLER SIZE :
30/-

£3 3 0

"ORIGINAL"

LAMBING CHEST

N^o 8



CONTENTS :

2	Bottles	Chemical Extract	..	..	..
1	Bottle	Carbolized Lambing Oil	..	..	..
1	dozen	Bottles Gaseous Fluid	..	..	..
6	dozen	Packets Ewe Drench	..	..	..
2	Bottles	Gaseodyne	..	..	..
2	Bottles	Broncholine	..	..	..
1	Bottle	Balsamic Castor Oil	..	..	..
1	Bottle	Curdolix	..	..	..
1	copy	"Veterinary Practice at Home,"	gratis		

SMALLER SIZE :

30/-

£3 3 0

“ORIGINAL”

LAMBING & CALVING

Nº 9



CONTENTS :

1 dozen	Bottles	Gaseous Fluid	..	..
$\frac{3}{4}$ dozen	Packets	Red Drench	..	..
$\frac{1}{4}$ dozen	Packets	Special Cleansing Drench	..	..
2 dozen	Packets	Ewe Drench	..	..
2 Bottles	Chemical	Extract	..	..
1 Bottle	Broncholine	..	..	..
1 Bottle	Balsamic	Castor Oil	..	..
1 Bottle	Carbolized	Lambing Oil	..	..
1 Bottle	Curdolix	..	..	..
2 Bottles	Gaseodyne	..	..	..
1 Bottle	Vetalenta	..	..	..
1 copy	“Veterinary Practice at Home,” gratis			

SMALLER SIZE:

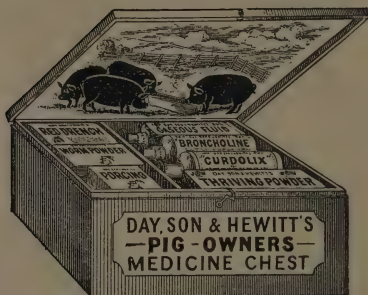
30/-

£3 3 0

“ORIGINAL”

PIG-OWNERS’

N^o10



CONTENTS :

½ dozen	Packets	Red Drench	..	..
2	Bottles	Gaseous Fluid	..	..
2	dozen	Packets	Porcino	..
2	dozen	Worm Powders	..	..
1	Bottle	Curdolix	..	..
1	Bottle	Brown Chemical Extract	..	..
1	Bottle	Broncholine	..	..
1	Bottle	Balsamic Castor Oil	..	..
1	Tin	Xemos	..	..
1	copy	“Veterinary Practice at Home,”	gratis	

DOUBLE SIZE:

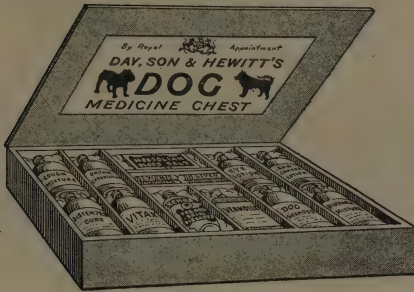
38/-

£1 1 0

"ORIGINAL"

DOG-OWNERS'

N^o11



CONTENTS :

1	Bottle	Distemper Cure	..	..
1	Bottle	Diarrhoea Mixture	..	..
1	Bottle	Vitax (Tonic Mixture)	..	..
1	Bottle	Dog Shampoo	..	..
1	Bottle	Ear Canker Lotion	..	..
1	Bottle	Eye Lotion	..	..
1	Bottle	Brown Embrocation	..	..
1	Bottle	Cough Mixture	..	..
1	Bottle	Vermolix	..	..
1	Tin	Kossolian Blood Salt Pills		
1	Tin	Xemos	..	..
1	Bottle	Aperient Pills	..	..
1	Bottle	Liver Pills	..	..
1	Bottle	Digestive Tablets	..	..
1	Bottle	Worm Pills	..	..
1	Book	"All about Sick Dogs"	..	..

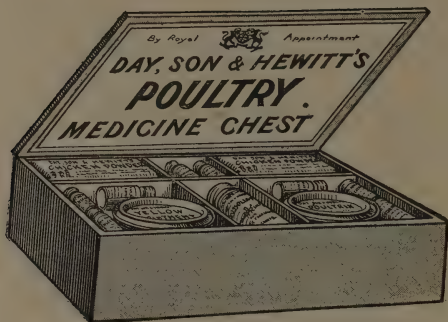
DOUBLE SIZE:
37/6

£1 0 0

“ORIGINAL”

POULTRY-KEEPERS'

Nº12



CONTENTS :

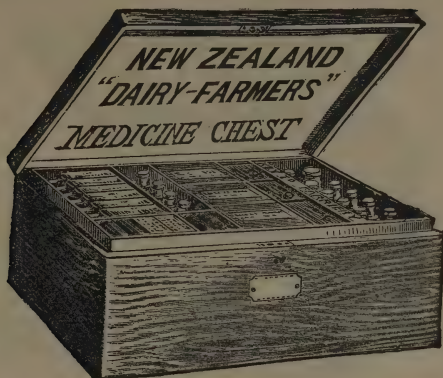
1	Tin Kossolian Salt Powder ..	..	..
1	Packet Chicken Powder ..	..	..
1	Packet Egg Powder ..	..	..
1	Tin Yellow Ointment ..	..	..
1	Tin Poultrix ..	..	..
1	Tin Tick and Insect Powder ..	..	..
1	Bottle Roup and Catarrh Powder ..	..	..
1	Bottle Castor Oil Capsules ..	..	..
1	Bottle Pip Capsules ..	..	..
1	Bottle Gape Pellets ..	..	..
1	Bottle Diarrhoea Pellets ..	..	..
1	Bottle Leg Weakness Pellets ..	..	..
1	Bottle Cod Liver Oil & Quinine Capsules ..	..	..
1	Book "All about Poultry Ailments,"	gratis	

DOUBLE SIZE:

27/6

£0 15 0

NEW ZEALAND DAIRY-FARMERS' CHEST



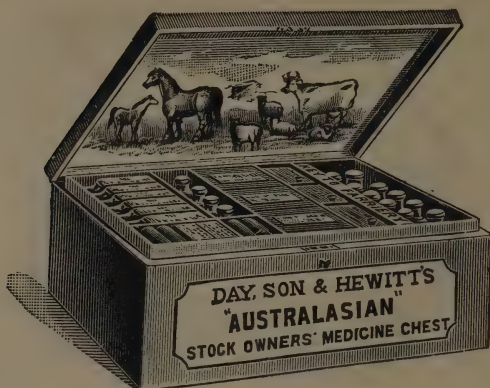
CONTENTS :

2	Bottles	Chemical	Extract (1 White, 1 Brown)				
1	Bottle	Vetamenta	..	..	..	..
$\frac{3}{4}$	dozen	Bottles	Gaseous	Fluid	..	..
1	dozen	Packets	Red	Drench	..	..
$\frac{1}{2}$	dozen	Packets	Cleansing	Drench	..	..
2	Bottles	Broncholine	..	..	..	..
1	Bottle	Gaseodyne	..	..	..	..
1	Quart	Curdolix	..	..	..	..
1	Milk	Fever	Syringe (with	Special	Tablets)		
1	copy	"Veterinary	Practice at	Home"	..		

NEW ZEALAND STOCK-OWNERS' CHEST

Full particulars of these Chests will be sent on application. They are specially arranged to suit the requirements of the New Zealand Stock-owner

AUSTRALASIAN STOCK-OWNERS' CHEST



CONTENTS :

2	Bottles Chemical Extract	..	..
1	dozen Bottles Gaseous Fluid	..	..
1	dozen Packets Red Drench	..	..
1	Tin Kossolian Blood Salt	..	..
1	Tin Easakof (a Cough Electuary)	..	
1	Tin Hornicura	..	..
1	Tin Gall Cure	..	..
2	dozen Assorted Horse Balls	..	..
	<i>(Physic, Condition, Diuretic, Worm)</i>		
1	copy "Veterinary Practice at Home"		

AUSTRALASIAN DAIRY-FARMERS' CHEST

Full particulars of these Chests will be sent on application. They are specially arranged to suit the requirements of the Australasian Stock-owner

BOTIQUINES ESPECIALES

PARA

SUD-AMERICA

PARA PROPIETARIOS DE CABALLOS



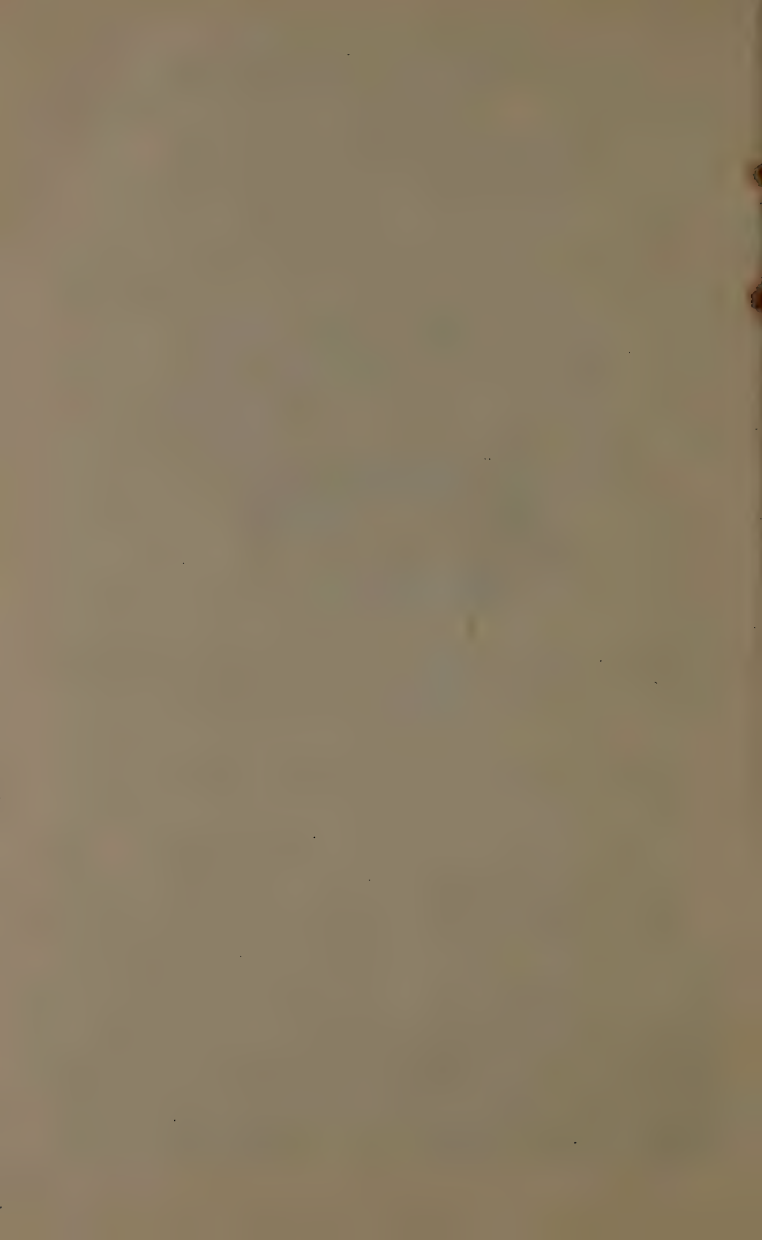
Arreglada especialmente para las necesidades de los Propietarios de Caballos, Domadores, Alquilador de Caballos, Fabricantes de Cerveza, Compañías de Tramvias, &c.

DE POCO PRECIO, SIMPLE Y EFICAZ

BOTIQUINES PARA GANADEROS



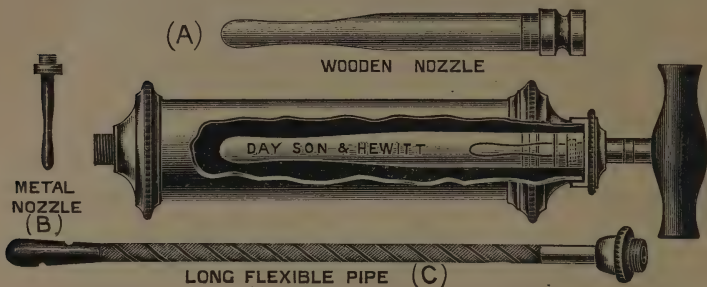
Es proverbial que los remedios contenidos en esta afamada caja son el adelanto mas grande hecho hasta ahora en la patologia animal, y tan facil es entender las instrucciones para su uso, que cualquiera persona con poco ó ningun conocimiento de la veterinaria, puede tratar con buen éxito, á los lances y enfermedades de todas clases



Illustrated Catalogue
OF
VETERINARY
INSTRUMENTS
AND
APPLIANCES

THE "SIMPLEX" CLYSTER SYRINGE

(Made of Brass, the inside parts coated with pure tin)



A, Nozzle for Rectum. **B**, for washing Bull's Sheath before service. **C**, specially adapted for Antiseptic Injections, and for syringing out the Womb in cases of Abortion.

The above is the cheapest and most up-to-date Syringe on the market, and will be found very useful for Constipation in all animals, arising from an over-accumulation of fæces; for affections of the Womb after Lambing, Calving or Foaling, . . . and for Inflammation of the Bowels . . .

Price : Pint (Foals, Calves, Sheep, &c.), including A and B nozzles	10/6
Quart (Cattle and Horses) do. do.	17/6
Flexible Pipe (C) for washing out Calf Bed, and adjustable to either size Syringe extra	2/6
HORSE CLYSTER or ENEMA PUMP , with India-rubber Tubing, Clyster Pipe, Brass Mounts, &c. (for use with pail), in Bag complete	30/6

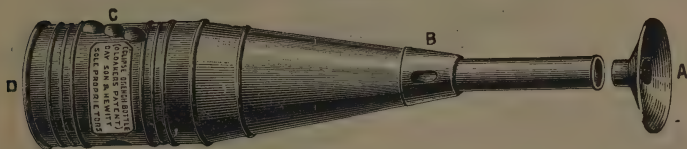


BRASS SYRINGE, for cases of Quittor, Fistulous Wounds, etc.

Price (including 2 special pipes) 1-oz. 5/-; 2-oz. 6/6

THE "ECLIPSE" DRENCHING BOTTLE

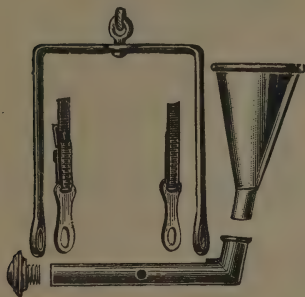
(Patent)



ADVANTAGES : A—Funnel for filling ; B—The Improved Air Tube ; C—The Grip ; D—Place for the Funnel when not in use

Sold in three sizes : Quart (for Cattle) 4/- ; Pint-and-a-half (for Horses) 4/- ; Half-pint (for Foals, Calves, Sheep, Lambs and Dogs) 3/-

THE PATENT DRENCHING BIT



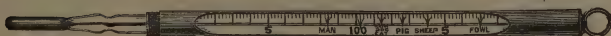
This has many advantages
in administering Medicines,
&c., to Horses, avoiding
any waste

Prices (complete with straps, rope, and funnel) 7/6 to 15/-

CLINICAL THERMOMETERS (Specially Marked)



Price 5/- each (post free), in vulcanite case

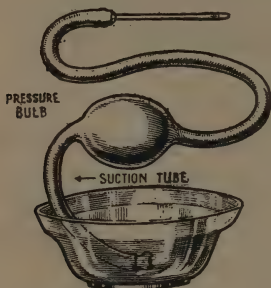


Shield for protecting mercury bulb

Price 8/6 each (post free)

THE "Complete" MILK FEVER OUTFIT

For the treatment of Milk Fever by the injection of sterile atmospheric air into the Udder. Inexpensive and quite simple in action. Complete with Aseptic Cotton Wool and Disinfectant for air chamber
Price in Box (with full directions for use) 10/6



MILK FEVER SYRINGE

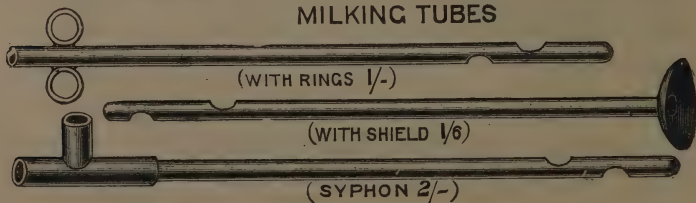
(Schmidt's System)

For the treatment of Milk Fever by the injection of an antiseptic . . fluid into the Udder . .

Complete with tube containing 14 tablets of Chinosol (for making Solutions)
Price in box (with full directions) 5/6

NOTE.—When ordering, be sure and state which treatment is required.

MILKING TUBES



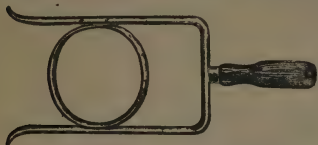
TEAT INSTRUMENT

For safely removing calculi, tumours or other . . obstructions in the duct of Cows' Teats . .

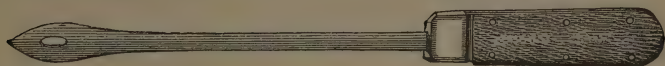
Price 3/- each



Balling Gun (polished), plain pattern	...	...	...	...	3/6
Balling Gun (Boxwood), Steel Bands and Rod (as figure), very strong,					9/6



Balling Irons (Mouth Gag), 5/- (as above), 7/6 (as above), and 21/-	
---	--



Seton Needle (for Dewlap)...	...	...	...	...	each	3/-
Seton Needle , with eye at point with screw handle (as figure)	...					6/-
Seton Needle , sharp or probe pointed, curved or straight (to fit screw handle)	...	...	...	...	from 2/- to	6/-
Suture Needles (assorted sizes)	1/- packet.				Wire , per hank	6d.



Trocar , for relieving Hoven or Blown Cattle	...	...	...	...	5/6
Ditto " " " Sheep	...	...	...	...	4/6

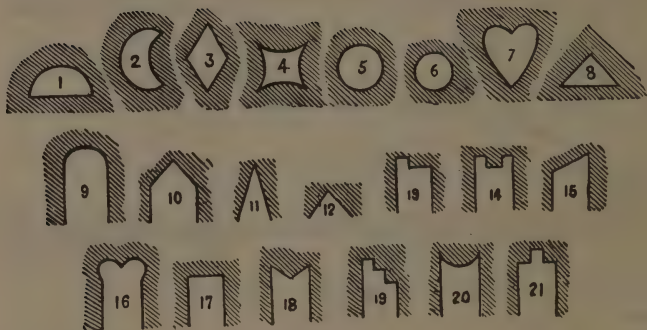
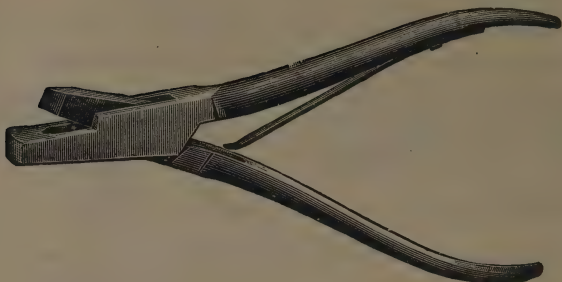


Cattle Probang (improved), for unchoking (as figure)*	...	...	...	...	16/6
Ditto Calf or Sheep	...	...	...	...	10/6
Mouth Gag , with straps	...	...	...	...	2/6

** By means of the above Instruments the lives of many valuable animals can be saved which otherwise would be lost. In all cases where bullocks are choked through eating too voraciously of turnips, they afford instant relief; or, if affected with Hoven, these instruments are just as effectual.*

Horse Measuring Standard , in Walking Stick, with spirit level and silver mount	18/6 and 21/-
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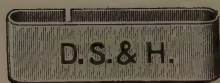
SHEEP EAR MARKERS



Sheep Ear Markers, various patterns (as above) ... each **5/-**

(In ordering, please distinctly mark No. and shape required)

CLOSED.



OPEN.

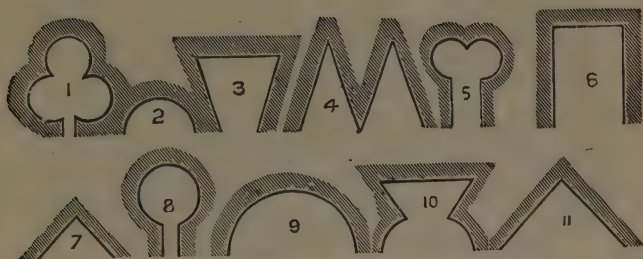


Ribbon Ear Markers (as above), for Sheep, Pigs, &c. per hundred **12/6**

Ditto for Cattle, Horses, &c. ... ditto **16/-**

Punches and Closing Pliers (combined) ... each **5/6**

CATTLE EAR MARKERS



Cattle Ear Markers, various patterns (as above) each **8/6**

Important in ordering—Please distinctly mark Number and Shape required

Branding Irons— $\frac{1}{2}$ -in. Figures, 0 to 8 per set **9/6**

$\frac{1}{2}$ -in. Letters, A to Z each **1/6**

Dishorner (for Calves), can also be used for ear-marking stock, a W, M or V, also a “diamond” and other marks can easily be made each **17/6**

Horn Trainers each **4/6 to 35/-**



Bull Nose Punch, for cutting out the piece of cartilage before placing in the Bull Ring black **12/6**, polished **15/-**

Bull Holder, with slide and spring (as figure) **6/6 and 8/6**

Ditto portable, to fold, polished **12/6**

Ditto black, very portable, plain **2/-**

Bull Ring, Copper, with double joints (as figure) **2/-**



Bull Leader, with swivel (as figure) for mounting on pole **6/-**

Ditto with outside spring ditto **7/-**

Ditto with swivel screw ditto **12/6**

CASTRATING SET

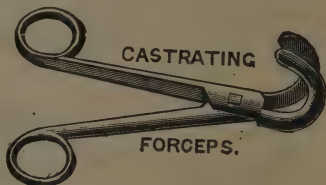


Containing Clams, Knife and two Irons, in leather case, complete ...	30/-
Searing Irons, 3/6 each ; Knives, 1/6 and 3/6 each.	
Castrating Clams, with slide on handles (as in set above) ...	10/6
Ditto with spring regulating rack... ..	12/6
Ditto with spoon-shaped blades	14/-



**GREGORY'S
CASTRATOR.**

For Lambs (as above)
Very simple and efficient, **2/8**



**CASTRATING
FORCEPS.**

For Lambs (as above)
Nickel-plated, **5/-**



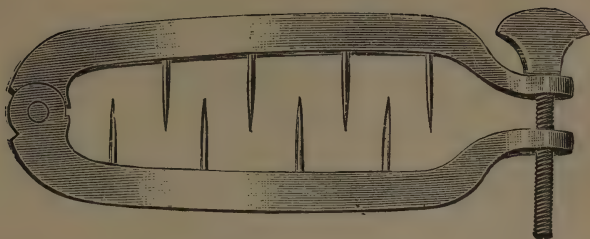
Tooth Rasps for filing and reducing Horses' Teeth... ..	6/6 and 8/6
Lamb Teats (India-rubber) each	4d. ; for Calf, 6d.
Horse Bandages (Newmarket) per set of four	3/9



Horse Clippers,
plain pattern, best make, **5/-**



Tail Scissors, plain **7/6**
Serrated blade (as figure) **10/-**



Prolapsus Clamps (West's), nickel-plated, Sheep **4/6**, Cows and Mares **7/6**



Gum Lancet, for Lampas, etc.;
aseptic metal handle ... **3/6**



Bleeding Lancet, with regulating slide,
to cut to any depth, brass handle **3/6**

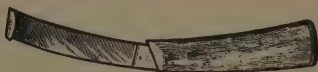
Horse Bleeding Lancet, aseptic metal handle **3/-**

Fleam, in aseptic metal handle, one blade ... ' ... **4/-**

Ditto ditto two blades, **6/-**; three blades **7/6**



Pig Ringer, with one gross Rings,
complete as figure **2/6**



Searcher or Foot Paring Knife,
in buck handle : **1/2**



Sheep Foot Knife, with spring back, horn handle (strong) ... **4/-**

Bifurcated Rivets (Copper) or **Studs**, for mending leather harness or bands.
Only require a hammer to make a join.

One gross (assorted sizes) box, **7d.**; twelve boxes for **5/-**

N.B.—When an instrument is ordered separately, an extra amount
should be sent for postage. Any article not catalogued will be
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